

RCA**20F511T**

Safety	Symbol	Stock	Description
	C001	266985	CAP. CER 100PF 50V +/-5% CH
	C002	266985	CAP. CER 100PF 50V +/-5% CH
	C004	266581	CAP. ELEC 10 UF 16V +/-20%
	C005	266583	CAP. CER 0.01UF 50V +80/-20% F
	C008A	266955	CAP. ELEC 1 UF 50V +/-20%
	C009	266598	CAP. ELEC 100 UF 16V +/-20%
	C011	266988	CAP. CER 27PF 50V +/-5% CH
	C011A	266597	CAP. ELEC 22 UF 16V +/-20%
	C016	266598	CAP. ELEC 100 UF 16V +/-20%
	C017	266583	CAP. CER 0.01UF 50V +80/-20% F
	C018	266592	CAP. CER 330PF 50V +/-5% CH
	C019	266583	CAP. CER 0.01UF 50V +80/-20% F
	C020	266583	CAP. CER 0.01UF 50V +80/-20% F
	C021	266590	CAP. CER 39PF 50V +/-5% CH
	C022	266590	CAP. CER 39PF 50V +/-5% CH
	C023	266581	CAP. ELEC 10 UF 16V +/-20%
	C024	266583	CAP. CER 0.01UF 50V +80/-20% F
	C025	266581	CAP. ELEC 10 UF 16V +/-20%
	C081	266583	CAP. CER 0.01UF 50V +80/-20% F
	C082	266947	CAP. ELEC 47 UF 16V +/-20%
	C1001	266971	CAP. CER 3.3 PF 50V +/-0.25 SL
	C1002	266971	CAP. CER 3.3 PF 50V +/-0.25 SL
	C1004	266991	CAP. CER 56PF 50V +/-5% SL TUB
	C1005	266991	CAP. CER 56PF 50V +/-5% SL TUB
	C1006	266997	CAP. M.P.E 0.1 UF 63V +/-5%
	C1008	266997	CAP. M.P.E 0.1 UF 63V +/-5%
	C1009	266581	CAP. ELEC 10 UF 16V +/-20%
	C101	266598	CAP. ELEC 100 UF 16V +/-20%
	C1010	266957	CAP. ELEC 3.3 UF 50V +/-20%
	C1011	266997	CAP. M.P.E 0.1 UF 63V +/-5%
	C1012	266986	CAP. CER 1500PF 50V +/-10% B
	C1013	266581	CAP. ELEC 10 UF 16V +/-20%
	C1014	266581	CAP. ELEC 10 UF 16V +/-20%
	C1015	266581	CAP. ELEC 10 UF 16V +/-20%
	C1016	266581	CAP. ELEC 10 UF 16V +/-20%
	C1018	266582	CAP. CER 1000 PF 50V +/-10% B
	C1019	266582	CAP. CER 1000 PF 50V +/-10% B
	C102	266583	CAP. CER 0.01UF 50V +80/-20% F
	C1020	266582	CAP. CER 1000 PF 50V +/-10% B
	C1021	266582	CAP. CER 1000 PF 50V +/-10% B
	C1022	266581	CAP. ELEC 10 UF 16V +/-20%
	C1023	266581	CAP. ELEC 10 UF 16V +/-20%
	C1025	266990	CAP. CER 470PF 50V +/-5% CH
	C1031	266583	CAP. CER 0.01UF 50V +80/-20% F

C1032	266583	CAP. CER 0.01UF 50V +80/-20% F
C1033	266583	CAP. CER 0.01UF 50V +80/-20% F
C1034	266583	CAP. CER 0.01UF 50V +80/-20% F
C1037	266997	CAP. M.P.E 0.1 UF 63V +/-5%
C1038	266947	CAP. ELEC 47 UF 16V +/-20%
C1039	266999	CAP. M.P.E 0.47UF 63V +/-5%
C104	266959	CAP. ELEC 4.7 UF 50V +/-20%
C1040	266582	CAP. CER 1000 PF 50V +/-10% B
C1041	266582	CAP. CER 1000 PF 50V +/-10% B
C1042	266597	CAP. ELEC 22 UF 16V +/-20%
C1043	266583	CAP. CER 0.01UF 50V +80/-20% F
C105	266583	CAP. CER 0.01UF 50V +80/-20% F
C106	266956	CAP. ELEC 22 UF 50V +/-20%
C110	266583	CAP. CER 0.01UF 50V +80/-20% F
C112	266582	CAP. CER 1000 PF 50V +/-10% B
C114	266583	CAP. CER 0.01UF 50V +80/-20% F
C201	266583	CAP. CER 0.01UF 50V +80/-20% F
C202	266947	CAP. ELEC 47 UF 16V +/-20%
C203	266955	CAP. ELEC 1 UF 50V +/-20%
C204	267001	CAP. P.E 0.0022UF 63V +/-5%
C205	266965	CAP. ELEC 0.22 UF 50V +/-10%
C211	266598	CAP. ELEC 100 UF 16V +/-20%
C212	266583	CAP. CER 0.01UF 50V +80/-20% F
C213	267001	CAP. P.E 0.0022UF 63V +/-5%
C214	266955	CAP. ELEC 1 UF 50V +/-20%
C215	267000	CAP. P.E 0.0015UF 63V +/-5%
C216	266959	CAP. ELEC 4.7 UF 50V +/-20%
C217	266949	CAP. ELEC 470 UF 25V +/-20%
C218	266958	CAP. ELEC 0.47 UF 50V +/-20%
C219	266582	CAP. CER 1000 PF 50V +/-10% B
C220	266581	CAP. ELEC 10 UF 16V +/-20%
C221	266583	CAP. CER 0.01UF 50V +80/-20% F
C227	266581	CAP. ELEC 10 UF 16V +/-20%
C228	266583	CAP. CER 0.01UF 50V +80/-20% F
C230	266583	CAP. CER 0.01UF 50V +80/-20% F
C231	266581	CAP. ELEC 10 UF 16V +/-20%
C232	266945	CAP. ELEC 1000 UF 16V +/-20%
C233	266583	CAP. CER 0.01UF 50V +80/-20% F
C234	266966	CAP. ELEC 0.47 UF 50V +/-10%
C235	267003	CAP. P.E 0.0082UF 63V +/-5%
C236	266958	CAP. ELEC 0.47 UF 50V +/-20%
C239	266583	CAP. CER 0.01UF 50V +80/-20% F
C240	266598	CAP. ELEC 100 UF 16V +/-20%
C241	266583	CAP. CER 0.01UF 50V +80/-20% F
C242	266997	CAP. M.P.E 0.1 UF 63V +/-5%
C301	266951	CAP. ELEC 220 UF 25V +/-20%
C302	266953	CAP. ELEC 100 UF 35V +/-20%

	C304	266959	CAP. ELEC 4.7 UF 50V +/-20%
	C305	266998	CAP. M.P.E 0.22UF 63V +/-5%
	C306	266582	CAP. CER 1000 PF 50V +/-10% B
	C309	266997	CAP. M.P.E 0.1 UF 63V +/-5%
	C310	266959	CAP. ELEC 4.7 UF 50V +/-20%
	C311	266954	CAP. ELEC 10 UF 50V +/-20%
	C401	266975	CAP. CER 1000 PF 500V +/-10% B
	C402	266981	CAP. CER 560 PF 2KVDC +/-5% SL
	C403	266972	CAP. CER 390 PF 50V +/-5% SL
	C404	266975	CAP. CER 1000 PF 500V +/-10% B
	C405	267004	CAP. PP 0.033 UF 100V +/-5%
	C406B	266995	CAP. M PP 0.012 UF 1.6KV +/-5%
	C408	266964	CAP. ELEC 10 UF 250V +/-20%
	C409	266976	CAP. CER 390 PF 500V +/-10% B
	C410	266994	CAP. M.PP 0.056 UF 250V +/-5%
	C411	266961	CAP. ELEC 47 UF 160V +/-20%
	C412	266972	CAP. CER 390 PF 50V +/-5% SL
	C413	266952	CAP. ELEC 1000 UF 35V +/-20%
	C415	266949	CAP. ELEC 470 UF 25V +/-20%
	C417	266583	CAP. CER 0.01UF 50V +80/-20% F
	C418	266946	CAP. ELEC 220 UF 16V +/-20%
	C420	266960	CAP. ELEC 10 UF 100V +/-20%
	C421	266993	CAP. M.PP 0.3 UF 250VDC +/-5%
	C422	267002	CAP. P.E 0.0047UF 63V +/-5%
	C423	266947	CAP. ELEC 47 UF 16V +/-20%
	C424	266989	CAP. CER 47PF 50V +/-5% SL
	C425	266583	CAP. CER 0.01UF 50V +80/-20% F
	C431	266959	CAP. ELEC 4.7 UF 50V +/-20%
	C501	266992	CAP. CER 680 PF 50V +/-5%
	C502	266992	CAP. CER 680 PF 50V +/-5%
	C503	266992	CAP. CER 680 PF 50V +/-5%
	C504	266977	CAP. CER 0.01UF 500V +/-10% B
	C505	266980	CAP. CER 220PF 2KV +/-10% B
	C507	266968	CAP. CER 0.01 UF 50V +80-20% F
	C508	266946	CAP. ELEC 220 UF 16V +/-20%
	C514	266583	CAP. CER 0.01UF 50V +80/-20% F
	C601	266999	CAP. M.P.E 0.47UF 63V +/-5%
	C602	266999	CAP. M.P.E 0.47UF 63V +/-5%
	C603	266581	CAP. ELEC 10 UF 16V +/-20%
	C604	266949	CAP. ELEC 470 UF 25V +/-20%
	C605	266598	CAP. ELEC 100 UF 16V +/-20%
	C607	267000	CAP. P.E 0.0015UF 63V +/-5%
	C608	267000	CAP. P.E 0.0015UF 63V +/-5%
	C610	266997	CAP. M.P.E 0.1 UF 63V +/-5%
#	C801	266996	CAP. M.PP 0.47 UF 250V +/-20%
#	C803	266983	CAP. CER 470PF 400VAC +/-10% B
#	C804	266983	CAP. CER 470PF 400VAC +/-10% B

	C804A	266582	CAP. CER 1000 PF 50V +/-10% B
	C805	266977	CAP. CER 0.01UF 500V +/-10% B
	C806	266963	CAP. ELEC 330 UF 200V +/-20%
	C807	266984	CAP. CER 4700PF 250VAC+80-20%F
	C808	266984	CAP. CER 4700PF 250VAC+80-20%F
	C809	267005	CAP. PP 4700 PF 630V +/-5%
	C812	266959	CAP. ELEC 4.7 UF 50V +/-20%
	C813	266969	CAP. CER 0.1 UF 50V +80-20% F
	C814	266967	CAP. CER 100 PF 50V +/-5% SL
	C815	266979	CAP. CER 1000 PF 2KV +/-10% B
#	C816	266982	CAP. CER 2200PF 400VAC+/-20% E
	C830	266974	CAP. CER 220 PF 250V +/-10%
	C831	266969	CAP. CER 0.1 UF 50V +80-20% F
	C832	266944	CAP LYTIC 2200UFD 25V
	C833	266978	CAP. CER 220 PF 1KV +/-10% R
	C834	266977	CAP. CER 0.01UF 500V +/-10% B
	C835	266962	CAP. ELEC 100 UF 160V +/-20%
	C841	266970	CAP. CER 220 PF 50V +/-5% SL
	C842	266969	CAP. CER 0.1 UF 50V +80-20% F
	C843	266948	CAP. ELEC 1000 UF 25V +/-20%
	C844	266583	CAP. CER 0.01UF 50V +80/-20% F
	C845	266950	CAP. ELEC 22 UF 25V +/-20%
	C848	266582	CAP. CER 1000 PF 50V +/-10% B
	C849	266945	CAP. ELEC 1000 UF 16V +/-20%
	C850	266997	CAP. M.P.E 0.1 UF 63V +/-5%
	C851	266973	CAP. CER 470 PF 50V +/-5% SL
	C901	266581	CAP. ELEC 10 UF 16V +/-20%
	C902	266581	CAP. ELEC 10 UF 16V +/-20%
	C903	266598	CAP. ELEC 100 UF 16V +/-20%
	C906	266946	CAP. ELEC 220 UF 16V +/-20%
	C907	266581	CAP. ELEC 10 UF 16V +/-20%
	C909	266997	CAP. M.P.E 0.1 UF 63V +/-5%
	C911	266997	CAP. M.P.E 0.1 UF 63V +/-5%
	C914	266582	CAP. CER 1000 PF 50V +/-10% B
	C915	266955	CAP. ELEC 1 UF 50V +/-20%
	C916	266955	CAP. ELEC 1 UF 50V +/-20%
	C921	266598	CAP. ELEC 100 UF 16V +/-20%
	CABLE	267026	CABLE 3 WIRE 820
	CABLE	267037	CABLE, 4 PIN 460
	CABLE	267041	CABLE, 5 PIN 450
	CABLE	267042	CABLE 2 PIN 450MM
	CABLE	267044	CABLE, 3 PIN 350MM
	CABLE	267057	CABLE 2 PIN 400MM
	CABLE	267120	CABLE, 4 PIN
	CAP.	266598	CAP. ELEC 100 UF 16V +/-20%
	CAP.	266987	CAP. CER 220PF 50V +/-5% CH
N	CHASS	267060	CHASSIS RAIL

N	CHASS	267062	CHASSIS RAIL
N	CIRCU	266877	CIRCUIT,KINE DRIVE
	CONNE	267023	CONNECTOR, 4 PIN
	CONNE	267025	CONNECTOR, 4 PIN
	CONNE	267059	CONNECTOR
	CRT	266875	CRT GND STRAP
	CRT	267067	CRT BRACKET
	D001	266889	DIODE ZENER 5V1 1/2W 5%
	D005	266885	DIODE 1N4148 (SWITCHING)
	D006	266885	DIODE 1N4148 (SWITCHING)
	D007	266885	DIODE 1N4148 (SWITCHING)
	D008	266885	DIODE 1N4148 (SWITCHING)
	D009	266885	DIODE 1N4148 (SWITCHING)
	D051C	266915	LED RED FB205
	D101	266892	DIODE CW574CD
	D204	266890	DIODE ZENER 6V2 1/2W 5%
	D205	266890	DIODE ZENER 6V2 1/2W 5%
	D206	266885	DIODE 1N4148 (SWITCHING)
	D251	266885	DIODE 1N4148 (SWITCHING)
	D253	266887	DIODE ZENER 20V 1/2W 5%
	D301	266883	DIODE 1N4001 (RECTIFIER)
	D302	266885	DIODE 1N4148 (SWITCHING)
	D303	266885	DIODE 1N4148 (SWITCHING)
	D304	266888	DIODE ZENER 3V9 1/2W 5%
	D305	266885	DIODE 1N4148 (SWITCHING)
	D307	266885	DIODE 1N4148 (SWITCHING)
	D401	266880	DIODE FR104 (FAST RECTIFIER)
	D402	266880	DIODE FR104 (FAST RECTIFIER)
	D403	266880	DIODE FR104 (FAST RECTIFIER)
	D404	266880	DIODE FR104 (FAST RECTIFIER)
	D405	266884	DIODE 1N4002 (RECTIFIER)
	D406	266891	DIODE ZENER 8V2 1/2W 5%
	D409	242907	DIODE BY228
	D410	266883	DIODE 1N4001 (RECTIFIER)
	D501	266885	DIODE 1N4148 (SWITCHING)
	D502	266885	DIODE 1N4148 (SWITCHING)
	D601	266885	DIODE 1N4148 (SWITCHING)
	D602	266885	DIODE 1N4148 (SWITCHING)
	D802	266880	DIODE FR104 (FAST RECTIFIER)
	D804	266886	DIODE 1SS136
	D805	266885	DIODE 1N4148 (SWITCHING)
	D806	266893	DIODE HER108
#	D815	266881	DIODE RL255 (POWER RECTIFIER)
#	D816	266881	DIODE RL255 (POWER RECTIFIER)
#	D817	266881	DIODE RL255 (POWER RECTIFIER)
#	D818	266881	DIODE RL255 (POWER RECTIFIER)
	D830	266882	DIODE RU3YX (FAST RECTIFIER)

	D831	266878	DIODE RU3C (FAST RECTIFIER)
	D833	266880	DIODE FR104 (FAST RECTIFIER)
	D835	266886	DIODE 1SS136
	D838	266894	DIODE 500MW 16HSC
	D839	266891	DIODE ZENER 8V2 1/2W 5%
	D840	266895	DIODE 6V2 500MW
#	DEGAU	267017	DEGAUSSING COIL 2500MM
	DIODE	266885	DIODE 1N4148 (SWITCHING)
#	F801	267047	FUSE 3.15AT 250VAC 5MMX20MM
	FERR.	267016	FERR. BEAD BF60
	FUSE	267064	FUSE HOLDER
	G1	267021	CONNECTOR, 1 PIN
	IC001	266906	IC EEPROM 8K M24C08 (WRITE)
	IC1001	266913	IC MSP 3425G B8 V3
	IC201	266910	IC TCL-A28V02-TO
	IC301	264879	IC STV9302
	IC401	257703	IC L7809CV
	IC402	257704	IC L7805CV 1.5A (REGULATOR)
	IC601	266914	IC TDA7057AQ (R/L AUDIO O/P)
	IC801	266909	IC MC44608P40
#	IC802	266907	PHOTO COUPLER HPC922-C
	IC901	266905	IC 4053 (ANALOG SW)
	INLAY	267054	INLAY SIDE AV
	IR	267052	IR WINDOW
	IR011	266876	IR RECEIVER MODULE
	J1002	267006	COIL CHOKE 10UH +/-10%
	J1004	267006	COIL CHOKE 10UH +/-10%
	J217	266916	RES. C.F. 10 OHM 1/6W +/-5%
	J305	266322	RES. C.F. 10K OHM 1/6W +/-5%
	L002	267010	COIL PL - 10 UH +/-5%
	L080	267014	COIL PL - 33 UH +/-5%
	L1001	267013	COIL PL - 22 UH +/-5%
	L1002	267013	COIL PL - 22 UH +/-5%
	L102	267007	COIL CHOKE 1 UH +/-10%
	L103	267007	COIL CHOKE 1 UH +/-10%
	L201	267008	COIL PL - 22UH +/-10% LGA0305-
	L202	267014	COIL PL - 33 UH +/-5%
	L204	267015	COIL PL - 8.2 UH +/-5%
	L207	267013	COIL PL - 22 UH +/-5%
	L208	267013	COIL PL - 22 UH +/-5%
	L402	267009	COIL CHOKE 0.6 UH +/-10%
	L412	267018	COIL LINEARITY 50 UH
	L804	267012	COIL CHOKE 100 UH +/-10%
	L843	267011	COIL CHOKE 10 UH +/-10%
	LED	267058	LED HOLDER
	LOGO	267068	LOGO
	OVERL	267055	OVERLAY REAR AV

	P001	266591	PIN BASE *3 TJC3-3A
	P006	266591	PIN BASE *3 TJC3-3A
	P1002	266588	HS 5P24 F/W 130
	P1101	266589	RCA SOCKET (YELLOW)
	P1102	266587	RCA SOCKET (WHITE)
	P1103	266585	RCA JACK RED (THREE FEET)
	P1104	266586	PIN BASE
	P1105	266584	PIN BASE
	P201	266580	PIN BASE
	P402	267028	CONNECTOR, 4 PIN
	P503	267021	CONNECTOR, 1 PIN
	P601	267022	CONNECTOR, 2 PIN
	P602	267024	CONNECTOR, 4 PIN
	P801	267020	CONNECTOR, 2 PIN
#	P802	267039	CONNECTOR AC 3 PIN
	P901	267045	RCA JACK AV-3.2-6W-K
	P902	267046	Y/C SOCKET VERTICAL TYPE
	P903	266580	PIN BASE
#	POWER	267048	POWER CORD
	POWER	267053	POWER BUTTON
	POWER	267070	POWER SPRING
	PUSH	267051	PUSH BUTTON
	Q001	266897	TRANSISTOR PDTC124ES (NPN)
	Q002	266579	TRANSISTOR 2SC1815Y
	Q003	266899	TRANSISTOR 2SA1015Y
	Q004	266897	TRANSISTOR PDTC124ES (NPN)
	Q005	266896	TRANSISTOR PDTA124ES (PNP)
	Q006	266897	TRANSISTOR PDTC124ES (NPN)
	Q1001	266579	TRANSISTOR 2SC1815Y
	Q1003	266579	TRANSISTOR 2SC1815Y
	Q1005	266579	TRANSISTOR 2SC1815Y
	Q1006	266579	TRANSISTOR 2SC1815Y
	Q101	266902	TRANSISTOR 2SC3779D (RF AMPL)
	Q208	266579	TRANSISTOR 2SC1815Y
	Q209	266579	TRANSISTOR 2SC1815Y
	Q210	266899	TRANSISTOR 2SA1015Y
	Q211	266898	TRANSISTOR PDTC144ES (NPN)
	Q212	266897	TRANSISTOR PDTC124ES (NPN)
	Q250	266579	TRANSISTOR 2SC1815Y
	Q251	266603	TRANSISTOR 2SA817AY
	Q401	185197	TRANSISTOR 2SC2482
	Q402	266903	TRANSISTOR 2SD2539 (HORIZ O/P)
	Q501	185197	TRANSISTOR 2SC2482
	Q502	185197	TRANSISTOR 2SC2482
	Q503	185197	TRANSISTOR 2SC2482
	Q510	266899	TRANSISTOR 2SA1015Y
	Q604	266897	TRANSISTOR PDTC124ES (NPN)

Q605	266899	TRANSISTOR 2SA1015Y
Q801	266904	TRANSISTOR 2SK2996 (MOS)
Q830	266901	TRANSISTOR 2SC2688L (NPN)
Q831	266579	TRANSISTOR 2SC1815Y
Q832	266579	TRANSISTOR 2SC1815Y
Q903	266579	TRANSISTOR 2SC1815Y
Q905	266579	TRANSISTOR 2SC1815Y
R001	266253	RES. C.F. 100 OHM 1/6W +/-5%
R002	266325	RES. C.F. 47 OHM 1/6W +/-5%
R003	266322	RES. C.F. 10K OHM 1/6W +/-5%
R004	266322	RES. C.F. 10K OHM 1/6W +/-5%
R005	266253	RES. C.F. 100 OHM 1/6W +/-5%
R006	266322	RES. C.F. 10K OHM 1/6W +/-5%
R007	266917	RES. C.F. 1.2K OHM 1/6W +/-5%
R008	266288	RES. C.F. 750 OHM 1/6W +/-5%
R009	266253	RES. C.F. 100 OHM 1/6W +/-5%
R010	266322	RES. C.F. 10K OHM 1/6W +/-5%
R011	266285	RES. C.F. 4.7K OHM 1/6W +/-5%
R012	266322	RES. C.F. 10K OHM 1/6W +/-5%
R013	266255	RES. C.F. 1K OHM 1/6W +/-5%
R015	266285	RES. C.F. 4.7K OHM 1/6W +/-5%
R016A	266271	RES. C.F. 2.2K OHM 1/6W +/-5%
R018A	266325	RES. C.F. 47 OHM 1/6W +/-5%
R025	266322	RES. C.F. 10K OHM 1/6W +/-5%
R026	266921	RES. C.F. 43K OHM 1/6W +/-5%
R027	266405	RES. C.F. 10 OHM 1/4W +/-5%
R028	266272	RES. C.F. 680 OHM 1/6W +/-5%
R029	266255	RES. C.F. 1K OHM 1/6W +/-5%
R030	266322	RES. C.F. 10K OHM 1/6W +/-5%
R031	266596	RES. C.F. 100K OHM 1/6W +/-5%
R042	266322	RES. C.F. 10K OHM 1/6W +/-5%
R043	266322	RES. C.F. 10K OHM 1/6W +/-5%
R046	266323	RES. C.F. 3.3K OHM 1/6W +/-5%
R047	266322	RES. C.F. 10K OHM 1/6W +/-5%
R050	266322	RES. C.F. 10K OHM 1/6W +/-5%
R051	266255	RES. C.F. 1K OHM 1/6W +/-5%
R052	266322	RES. C.F. 10K OHM 1/6W +/-5%
R055	266271	RES. C.F. 2.2K OHM 1/6W +/-5%
R1001	266253	RES. C.F. 100 OHM 1/6W +/-5%
R1002	266253	RES. C.F. 100 OHM 1/6W +/-5%
R1003	266322	RES. C.F. 10K OHM 1/6W +/-5%
R1004	266255	RES. C.F. 1K OHM 1/6W +/-5%
R1005	266323	RES. C.F. 3.3K OHM 1/6W +/-5%
R1006	266325	RES. C.F. 47 OHM 1/6W +/-5%
R1007	266344	RES. C.F. 1.5K OHM 1/6W +/-5%
R1010	266253	RES. C.F. 100 OHM 1/6W +/-5%
R1011	266254	RES. C.F. 390 OHM 1/6W +/-5%

R1014	266255	RES. C.F. 1K OHM 1/6W +/-5%
R1015	266255	RES. C.F. 1K OHM 1/6W +/-5%
R1016	266255	RES. C.F. 1K OHM 1/6W +/-5%
R1017	266255	RES. C.F. 1K OHM 1/6W +/-5%
R1022	266255	RES. C.F. 1K OHM 1/6W +/-5%
R1023	266255	RES. C.F. 1K OHM 1/6W +/-5%
R114	266377	RES. C.F. 56 OHM 1/6W +/-5%
R115	266368	RES. C.F. 150 OHM 1/6W +/-5%
R116	266255	RES. C.F. 1K OHM 1/6W +/-5%
R117	266368	RES. C.F. 150 OHM 1/6W +/-5%
R118	266369	RES. C.F. 820 OHM 1/6W +/-5%
R119	266370	RES. C.F. 470 OHM 1/6W +/-5%
R1405	266344	RES. C.F. 1.5K OHM 1/6W +/-5%
R1406	266372	RES. C.F. 6.8K OHM 1/6W +/-5%
R1407	266374	RES. C.F. 4.3K OHM 1/6W +/-5%
R1420	266367	RES. C.F. 1.8K OHM 1/6W +/-5%
R1421	266366	RES. C.F. 2.7K OHM 1/6W +/-5%
R201	266365	RES. C.F. 220 OHM 1/6W +/-5%
R202	266365	RES. C.F. 220 OHM 1/6W +/-5%
R203	266365	RES. C.F. 220 OHM 1/6W +/-5%
R205	266919	RES. C.F. 30K OHM 1/6W +/-5%
R206	266362	RES. C.F. 220K OHM 1/6W +/-5%
R208	266370	RES. C.F. 470 OHM 1/6W +/-5%
R215	266285	RES. C.F. 4.7K OHM 1/6W +/-5%
R216	266364	RES. C.F. 47K OHM 1/6W +/-5%
R217	266600	RES. C.F. 270 OHM 1/6W +/-5%
R218	266253	RES. C.F. 100 OHM 1/6W +/-5%
R218A	266323	RES. C.F. 3.3K OHM 1/6W +/-5%
R219	266593	RES. C.F. 330 OHM 1/6W +/-5%
R220	266365	RES. C.F. 220 OHM 1/6W +/-5%
R227	266601	RES. C.F. 120 OHM 1/6W +/-5%
R228	266253	RES. C.F. 100 OHM 1/6W +/-5%
R232	266596	RES. C.F. 100K OHM 1/6W +/-5%
R233	266600	RES. C.F. 270 OHM 1/6W +/-5%
R234	266255	RES. C.F. 1K OHM 1/6W +/-5%
R237	266380	RES. C.F. 8.2K OHM 1/6W +/-5%
R238	266365	RES. C.F. 220 OHM 1/6W +/-5%
R244	266599	RES. M.F. 15K OHM 1/6W +/-1%
R245	266364	RES. C.F. 47K OHM 1/6W +/-5%
R253	266596	RES. C.F. 100K OHM 1/6W +/-5%
R254	266595	RES. M.F. 390 OHM 1/4W +/-1%
R255	266594	RES. M.F. 120 OHM 1/4W +/-1%
R256	266593	RES. C.F. 330 OHM 1/6W +/-5%
R257	266271	RES. C.F. 2.2K OHM 1/6W +/-5%
R302	266927	RES. M.F. 10K OHM 1/6W +/-1%
R303	266928	RES. M.F. 100K OHM 1/6W +/-1%
R304	266934	RES. M.O. 1.2 OHM 1W +/-5%

	R306	266929	RES. M.F. 22K OHM 1/6W +/-1%
	R309	266937	RES. M.O. 2.2 OHM 2W +/-5%
	R311	266285	RES. C.F. 4.7K OHM 1/6W +/-5%
	R315	266918	RES. C.F. 15K OHM 1/6W +/-5%
	R336	266935	RES. M.O. 220 OHM 1W +/-5%
	R401	266365	RES. C.F. 220 OHM 1/6W +/-5%
	R402	266939	RES.C.C.5W 3.3KOHM +/-5%
#	R403	266932	RES. FUS. 1 OHM 2W +/-5%
	R404	266936	RES. M.O. 15K OHM 2W +/-5%
#	R405	266349	RES. FUS. 1 OHM 1W +/-5% (LS)
	R406	266933	RES. M.O. 12K OHM 1W +/-5%
#	R407	266321	RES. FUS. 1 OHM 1/2W +/-5%
	R408	266355	RES. M.O. 1K OHM 1W +/-5%
#	R409	266349	RES. FUS. 1 OHM 1W +/-5% (LS)
	R410	266345	RES. M.O. 10K OHM 1W +/-5%
	R411	266347	RES. M.O. 1.2K OHM 1W +/-5%
	R414	266322	RES. C.F. 10K OHM 1/6W +/-5%
	R415	266255	RES. C.F. 1K OHM 1/6W +/-5%
#	R418	266349	RES. FUS. 1 OHM 1W +/-5% (LS)
#	R420	266351	RES. FUS. 1.5 OHM 1W +/-5%
	R501	266253	RES. C.F. 100 OHM 1/6W +/-5%
	R502	266285	RES. C.F. 4.7K OHM 1/6W +/-5%
	R503	266288	RES. C.F. 750 OHM 1/6W +/-5%
	R504	266253	RES. C.F. 100 OHM 1/6W +/-5%
	R505	266285	RES. C.F. 4.7K OHM 1/6W +/-5%
	R506	266288	RES. C.F. 750 OHM 1/6W +/-5%
	R507	266253	RES. C.F. 100 OHM 1/6W +/-5%
	R508	266285	RES. C.F. 4.7K OHM 1/6W +/-5%
	R509	266288	RES. C.F. 750 OHM 1/6W +/-5%
	R510	266282	RES. M.O. 18K OHM 2W +/-5%
	R511	266282	RES. M.O. 18K OHM 2W +/-5%
	R512	266282	RES. M.O. 18K OHM 2W +/-5%
	R514	266278	RES. C.C. 2.7K OHM 1/2W +/-10%
	R515	266278	RES. C.C. 2.7K OHM 1/2W +/-10%
	R518	266278	RES. C.C. 2.7K OHM 1/2W +/-10%
	R521	266274	RES. C.F. 100K OHM 1/4W +/-5%
	R522	266255	RES. C.F. 1K OHM 1/6W +/-5%
	R523	266272	RES. C.F. 680 OHM 1/6W +/-5%
	R524	266271	RES. C.F. 2.2K OHM 1/6W +/-5%
	R525	266370	RES. C.F. 470 OHM 1/6W +/-5%
	R526	266370	RES. C.F. 470 OHM 1/6W +/-5%
	R527	266370	RES. C.F. 470 OHM 1/6W +/-5%
	R602	266378	RES. C.F. 33K OHM 1/6W +/-5%
	R606	266380	RES. C.F. 8.2K OHM 1/6W +/-5%
	R612	266383	RES. C.F. 22K OHM 1/6W +/-5%
	R613	266383	RES. C.F. 22K OHM 1/6W +/-5%
	R620	266943	RES. WIRE ROUND 0.68 OHM 2W +/

	R621	266922	RES. C.F. 100 OHM 1/4W +/-5%
#	R802	266940	RES. H.VOLT. CC 1M OHM 1/2W +/-
	R804	266930	RES. M.F. 0.1M OHM 1/4W +/-1%
	R804A	266931	RES. M.F. 9.1K OHM 1/4W +/-1%
	R806	266285	RES. C.F. 4.7K OHM 1/6W +/-5%
	R807	266920	RES. C.F. 3.9K OHM 1/6W +/-5%
	R808	266938	RES.C.C.5W 22KOHM +/-10
	R809	266255	RES. C.F. 1K OHM 1/6W +/-5%
	R810	266942	RES. WIRE ROUND 0.22 OHM 2W +/-
	R811	266924	RES. C.F. 470 OHM 1/4W +/-5%
	R811A	266923	RES. C.F. 22 OHM 1/4W +/-5%
#	R812	266941	RES. H.VOLT.CC 8.2M OHM 1W
	R831	266926	RES. C.F. 56K OHM 1/2W +/-5%
	R832	266925	RES. C.F. 4.7 OHM 1/2W +/-5%
	R833	266385	RES. C.F. 220 OHM 1/4W +/-5%
	R834	266323	RES. C.F. 3.3K OHM 1/6W +/-5%
	R835	266397	RES. C.F. 3.9K OHM 1/4W +/-5%
	R836	266398	RES.C.C.5W 10KOHM +/-10%
	R837	266403	RES. M.O. 33K OHM 2W +/-5%
	R838	266404	RES. C.F. 18K OHM 1/6W +/-5%
	R844	266322	RES. C.F. 10K OHM 1/6W +/-5%
	R850	266372	RES. C.F. 6.8K OHM 1/6W +/-5%
	R851	266405	RES. C.F. 10 OHM 1/4W +/-5%
	R901	266255	RES. C.F. 1K OHM 1/6W +/-5%
	R902	266255	RES. C.F. 1K OHM 1/6W +/-5%
	R903	266320	RES. C.F. 82 OHM 1/6W +/-5%
	R912	266383	RES. C.F. 22K OHM 1/6W +/-5%
	R913	266383	RES. C.F. 22K OHM 1/6W +/-5%
	R914	266322	RES. C.F. 10K OHM 1/6W +/-5%
	R920	266255	RES. C.F. 1K OHM 1/6W +/-5%
	R921	266322	RES. C.F. 10K OHM 1/6W +/-5%
	R922	266255	RES. C.F. 1K OHM 1/6W +/-5%
	R923	266320	RES. C.F. 82 OHM 1/6W +/-5%
	R924	266255	RES. C.F. 1K OHM 1/6W +/-5%
	R929	266320	RES. C.F. 82 OHM 1/6W +/-5%
Z	REAR	267050	REAR CABINET
	REMOT	265714	REMOTE TRANSMITTER: RCR130TB1
#	RT801	266356	PTC 9 OHM +/-20%
#	RT802	266357	NTC 4.7 OHM +/-18%
	S008A	266361	SW. TACT
	S1401	266289	TACT SWITCH
	S1402	266289	TACT SWITCH
	S1403	266289	TACT SWITCH
	S1404	266289	TACT SWITCH
	S1405	266289	TACT SWITCH
	S1406	266289	TACT SWITCH
#	S501	266290	CRT SOCKET GZS10-2-AC2

	SPEAK	267019	SPEAKER (50MMX120MM) 16 OHM 5W
	SPRIN	267069	SPRING CRT
	STRAI	267061	STRAIN RELIEF
	T401	266291	TRANSFOR HOR. DRIVE (MAGNETIC
#	T402	266307	FBT BSC25-0279Q
#	T801	266308	LINE FILTER
#	T803	266309	TRANSFORMER
	TU101	266310	TUNER
	VR830	266311	TRIMMER B10K HORIZ TYPE
	X001	266315	CRYSTAL 8.0MHZ
	X1001	266316	CRYSTAL 18.432MHZ
	X1002	266317	CERAMIC FILTER
	X201	266318	CER TRAP TPS 4.5MHZ
	Z101	266319	SAW FILTER

ALIGNMENTS

Operating Conditions

Unless otherwise noted, the following conditions must be observed when aligning this chassis:

Chassis must be operated from a 120VAC isolation transformer, with line voltage set to 120VAC ($\pm 2.0V$).

Picture controls (color, brightness etc.) must be set to midrange.

Procedures must be performed in the sequence given.

A 10X probe must be used for oscilloscope and frequency measurements.

The audio output leads must not be shorted together or to ground with the chassis on.

All video signals must have -40 IRE sync tips unless specified otherwise.

Chassis AC power must be removed for 10 seconds before disconnecting any cable.

A 3-minute warm-up is required for chassis or module related alignments. A 15-minute warm-up is required for Kine related alignments.

Required Test Equipment

- Dual-Trace Oscilloscope
- Digital Voltmeter
- Frequency Counter
- Audio Signal Generator
- NTSC Signal Generator (B&K 1249, or equivalent)
- MTS Signal Generator (B&K 2009, or equivalent)
- Sweep/Marker Generator (or Standard Signal Generator)
- DC Power Supply (5.0V/0.25A) for TAG001

Entering the Service mode

1. Enter the service mode (S-Mode) by pressing the VOLUME DOWN key on the instrument until the volume decreases to minimum.
2. Press the INFO key on the remote handset while holding the VOLUME DOWN key on the instrument.
3. Press the PROGRAM UP/DOWN buttons to select the different adjustments under the first menu and press the VOLUME UP/DOWN buttons to adjust the setting (value).
5. Press the OK button to toggle into the Main Menu selection mode and select the different Main menu sections using the PROGRAM UP/DOWN buttons. Press the OK button again to toggle back into the value adjustment mode.
6. Menus up to menu 19 can be selected directly using the remote control by pressing digital buttons 1~9, 0, notebook, CAP, Display, Sleep, Calendar, System/INS, Favourite, Return and Picture.
7. Press the Sound button to save the new settings and exit the service mode.

Note: Many factory alignments appear in the menus but only the ones listed here can be changed. The values can be accessed and the value (hex number) on the screen can be changed but the actual value the instrument is using cannot be changed except at the factory using special equipment.

The following is a list of all the menus and a description of the individual adjustments under each Main menu that can be changed. *Only the following menu items can actually be adjusted.*

Menu 1 (Remote key: 1)

Item	Remark
RC	R cut-off setting
GC	G cut-off setting
BC	B cut-off setting
GD	G drive setting
BD	B drive setting

Menu 2 (Remote key: 2)

Item	Remark
HIGH6	60Hz height
VP60	Vertical position
VLIN6	60Hz Vertical linearity
VSC6	Vertical S correction (60Hz)
VBLK6	Vertical blanking start & stop [1CH, bit 3 ~ 0]
VCEN6	Vertical center (60Hz)

Menu 3 (Remote key: 3)

Item	Remark
HPOS6	Horizontal position (60Hz)

Menu 4 (Remote key: 4)

No adjustments allowed

Menu 5 (Remote key: 5)

Item	Remark
BRTC	50% brightness

Menu 6 (Remote key: 6)

No adjustments allowed

Menu 7 (Remote key: 7)

No adjustments allowed

Menu 8 (Remote key: 8)

Item	Remark
RFAGC	RFAGC [12H, bit 5 ~ 0]

Menu 9 (Remote key: 9)

No adjustments allowed

ALIGNMENTS (Continued)

Menu 10 (Remote key: 0)

No adjustments allowed

Menu 11 (Remote key: Notepad)

No adjustments allowed

Menu 12 (Remote key: CAP)

Item	Remark
OSD2	OSD Horizontal Position
OSDF2	OSD PLL DATA except
PYNX	Normal H.SYNC max
PYNN	Normal H.SYNC min
PYXS	Search H.SYNC max
PYNS	Search H.SYNC min

Menu 13 (Remote key: Display)

No adjustments allowed

Menu 14 (Remote key: SLEEP)

No adjustments allowed

Menu 15 (Remote key: CALENDAR)

Item	Remark
RC-C	R cut-off setting (for cool color temperature)
GC-C	G cut-off setting (for cool color temperature)
BC-C	B cut-off setting (for cool color temperature)
GD-C	G drive setting (for cool color temperature)
BD-C	B drive setting (for cool color temperature)

Menu 16 (Remote key: SYSTEM/INS)

Item	Remark
RC-W	R cut-off setting (for warm color temperature)
GC-W	G cut-off setting (for warm color temperature)
BC-W	B cut-off setting (for warm color temperature)
GD-W	G drive setting (for warm color temperature)
BD-W	B drive setting (for warm color temperature)

Menu 17 (Remote key: FAV)

No adjustments allowed

Menu 18 (Remote key: RETURN)

No adjustments allowed

Menu 19 (Remote key: PICTURE)

No adjustments allowed

Menu 20: no shortcut key

No adjustments allowed

Menu 21: no shortcut key

No adjustments allowed

Menu 22: no shortcut key

No adjustments allowed

B+ Adjustment

1. Tune the instrument to receive a crosshatch signal.
2. Set the Preset Picture Mode to normal.
3. Adjust VR830 for 106Vdc +/- 0.5V at TP2 (B+).

RF AGC Adjustment

The RF AGC has been preset at the time of manufacture for optimum operation over a wide range of RF signal input conditions. Readjustment should not be required unless the tuner has been repaired or unusual signal conditions exist such as:

- a. Cable TV—adjacent channel interference.
- b. Picture bending and/or channel 6 color beats which are usually due to excessive RF signal input. This occurs when the receiver location is too close to the transmitting tower. It may also occur when the receiver is connected to an antenna distribution system where the RF signal has been amplified. The signal should be attenuated at the antenna input to a more satisfactory level.
- c. Picture Noise caused by “broadcast noise” or weak signal. If the broadcast is “clean” and the received signal is at least 1 mV, the picture will be noise free in any area.

NOTE: Adjustment of the RF AGC parameters may not have any visible effect except under unusual conditions. Adjusting the RF AGC to one extreme of its parameter limits will usually provide a relatively poor signal-to-noise ratio, while adjustment to the other extreme of its parameter limits will cause a degradation of overload conditions such as channel 6 color beats or Cable TV adjacent channel interference. Use the weakest local signal to adjust RF AGC parameter setting (Menu 8). If the RF AGC parameter setting is adjusted, check all local channels for proper operation.

Screen Adjustment

Test Point:	Observe Display
Adjust:	Screen Control Flyback

1. Tune the instrument to receive a crosshatch signal.
2. Set the Picture color temperature to Normal and set all of the picture controls (brightness, contrast etc.) to midrange.
3. Enter the Service mode and preset all of the Menu 1 values to 40 (drives and cutoffs).
4. While still in the service mode, press the Input button on the remote control. This will collapse the vertical.
5. Adjust the screen control to just produce a dim horizontal white line on the CRT.

Focus Adjustment

Test Point:	Observe Display
Adjust:	Focus Control Flyback

1. Tune the instrument to receive a crosshatch signal.
2. Adjust the *Focus* control for best overall focus.

ALIGNMENTS (Continued)

Color Temperature Adjustment - Normal

Test Point:	Observe Display	
Adjust:	Menu 1 RC	(Red Cutoff)
	Menu 1 GC	(Green Cutoff)
	Menu 1 BC	(Blue Cutoff)
	Menu 1 GD	(Green Drive)
	Menu 1 BD	(Blue Drive)

1. Perform the Screen adjustment.
2. Set the Picture color temperature to Normal and set all of the picture controls (brightness, contrast etc.) to midrange.
3. Tune the instrument to receive a grayscale stairstep test pattern.
4. Enter the Service mode and adjust the values for the Cutoff and Drive controls to obtain proper color tracking (no tinting - only black, white and shades of gray). Correct color temperature is 9300 degrees - X=285 Y=294.
5. Check the low light to high light gray scale tracking (black and white picture). Should any color other than gray or white be dominant in low light to high light areas the color temperature settings have not been properly set. Repeat the procedure if necessary.

NOTE: Color Cutoff adjustments affect the low light (dark) areas while color drive adjustments affect the high light (white) areas.

Color Temperature Adjustment - Warm

Test Point:	Observe Display	
Adjust:	Menu 16 RC-W	(Red Cutoff-W)
	Menu 16 GC-W	(Green Cutoff-W)
	Menu 16 BC-W	(Blue Cutoff-W)
	Menu 16 GD-W	(Green Drive-W)
	Menu 16 BD-W	(Blue Drive-W)

1. Perform the Color Temperature - Normal adjustment
2. Write down the hex values of the Color Temperature - Normal adjustments (Menu 1).
3. Select service menu 16.
4. Add or subtract the number of steps to each drive and cutoff value as indicated:

Adjustment	Steps from Color Temp Normal Value
Menu 16 RC-W (Red Cutoff-W)	56
Menu 16 GC-W (Green Cutoff-W)	43
Menu 16 BC-W (Blue Cutoff-W)	40
Menu 16 GD-W (Green Drive-W)	2
Menu 16 BD-W (Blue Drive-W)	-17

Color Temperature Adjustment - Cool

Test Point:	Observe Display	
Adjust:	Menu 15 RC-C	(Red Cutoff-C)
	Menu 15 GC-C	(Green Cutoff-C)
	Menu 15 BC-C	(Blue Cutoff-C)
	Menu 15 GD-C	(Green Drive-C)
	Menu 15 BD-C	(Blue Drive-C)

1. Perform the Color Temperature - Normal adjustment
2. Write down the hex values of the Color Temperature - Normal adjustments (Menu 1).
3. Select service menu 15.
4. Add or subtract the number of steps to each drive and cutoff value as indicated:

Adjustment	Steps from Color Temp Normal Value
Menu 16 RC-C (Red Cutoff-C)	54
Menu 16 GC-C (Green Cutoff-C)	45
Menu 16 BC-C (Blue Cutoff-C)	45
Menu 16 GD-C (Green Drive-C)	1
Menu 16 BD-C (Blue Drive-C)	22

Sub-brightness Adjustment

Test Point:	Observe Display	
Adjust:	Menu 5 BRTC	Sub-brightness

1. Tune the instrument to receive a grayscale stairstep signal from the A/V inputs.
2. Set the Picture color temperature to Normal and set all of the picture controls (brightness, contrast etc.) to midrange.
3. Enter the Service mode and select Menu 5.
4. Adjust the value of BRTC (Sub-brightness) to just light the second dark bar making sure the first bar stays black.

Geometry Adjustment

Test Point:	Observe Display	
Adjust:	Menu 3 HPOS6	H Position
	Menu 2 HIGH6	Height
	Menu 2 VLIN6	Linearity
	Menu 2 VP60	Vertical Center
	Menu 2 VSC6	Vert S Correct

Note: Confirm correct convergence and purity before adjusting geometry.

1. Tune the instrument to receive a circular test pattern suitable for making visual geometry adjustments.
2. Enter the Service mode.
3. Adjust the Menu 2 and Menu 3 values listed for the least amount of geometric distortion and approximately 7% overscan.

X-Ray Protection Test

1. Tune the instrument to receive a crosshatch signal.
2. Apply an external power supply to C431 (observe polarity). Slowly increase the voltage from the supply.
3. The instrument must shut down and remain off when the voltage reaches 27 volts DC.

High Voltage Test

1. High voltage must not exceed 30.4 kV at any beam current.

ALIGNMENTS (Continued)

Color Purity Adjustment

1. If a magnetic-tape beam bender is mounted on the neck of the picture tube, replace it with an adjustable-type (Magnet Assembly) prior to center-purity and center-convergence adjustments. Consult the replacement parts list for the correct part number.
2. Warm up the instrument for 20 minutes with the brightness set to max.
3. Fully degauss the receiver using an external degaussing coil.
4. Roughly adjust convergence.
5. Input a black and white signal.
6. Turn the low-light controls (Red and Blue) fully counterclockwise to obtain a green field. Adjust the Drive controls for a green field.

7. Loosen the Deflection Yoke clamp screw, and move the Deflection Yoke as close to the purity magnet as possible. Refer to figure 1 below.
8. Loosen the purity magnet clamp. Adjust the purity magnet to set a vertical green raster precisely at the center of the screen. Then tighten the clamp.
9. Slowly move the Deflection Yoke forward, and adjust it for the best overall green screen.
10. Tighten the Deflection Yoke clamp screw.
11. Produce a blue and red raster. Turn the bias controls fully clockwise. Ensure that good purity is obtained on each field.

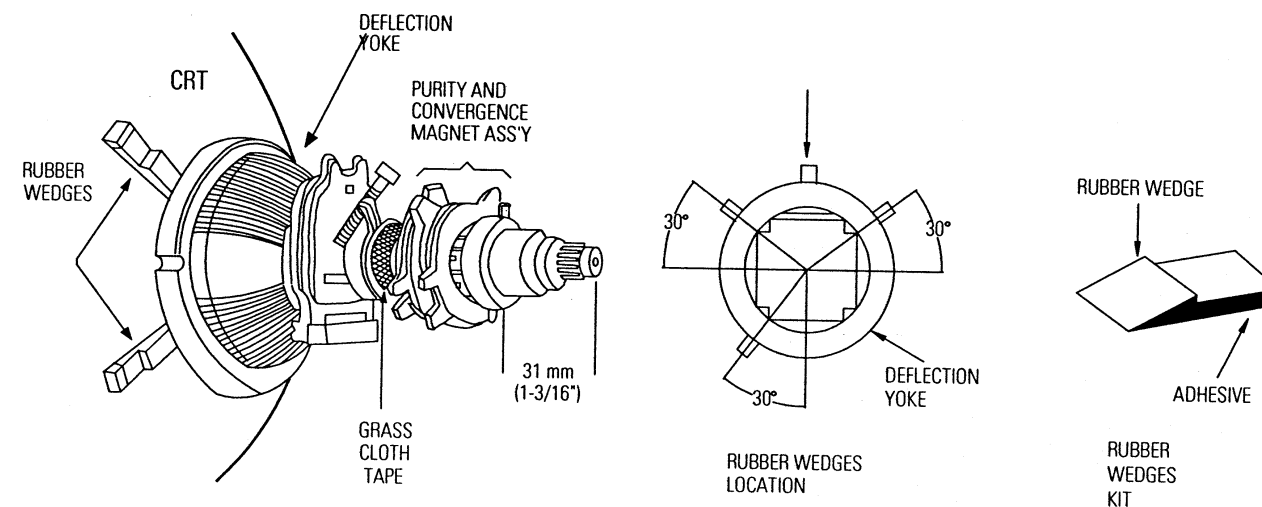


Fig. 1 Tube Assembly

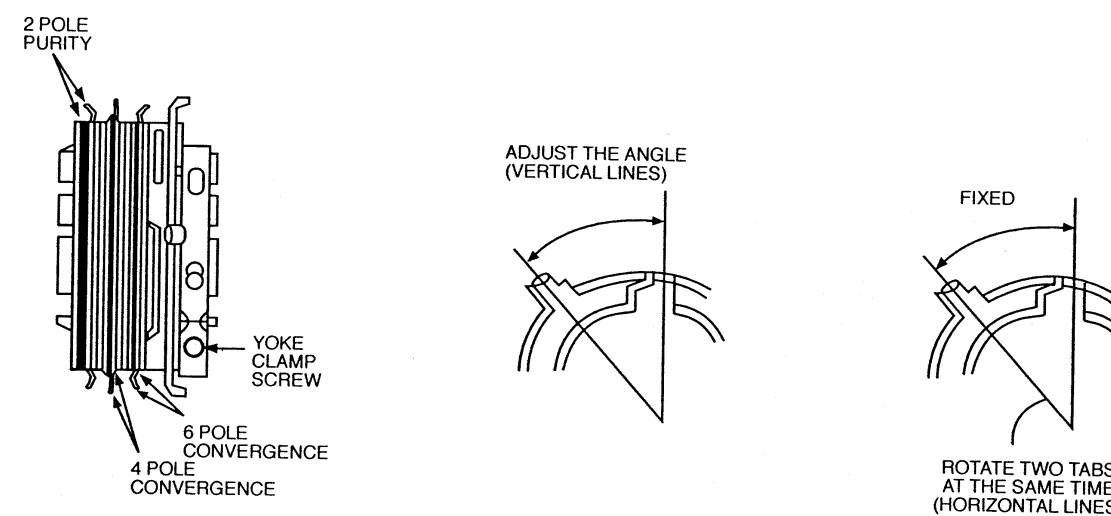


Fig. 2 Purity and Convergence Magnets

ALIGNMENTS (Continued)

Center Convergence Adjustment

1. Before attempting convergence adjustments the receiver should be ON for at least 20 minutes.
2. Input a crosshatch pattern from a color bar generator.
3. Adjust the Brightness and Contrast controls for a well defined pattern.
4. Adjust the two tabs of the 4-pole magnets. Change the angle between the tabs, and superimpose red and blue vertical lines in the center area of the picture screen.
5. Next, turn both tabs at the same time. Keeping the angle constant, superimpose the red and blue horizontal lines at the center of the screen.
6. Adjust the two tabs of 6-pole magnets. Superimpose the red/blue lines with the green. Adjusting the angle affects the horizontal lines.
7. Repeat adjustments 3, 4 and 5. The dot movement will be complex due to the interaction of the 4-pole and 6-pole magnets.

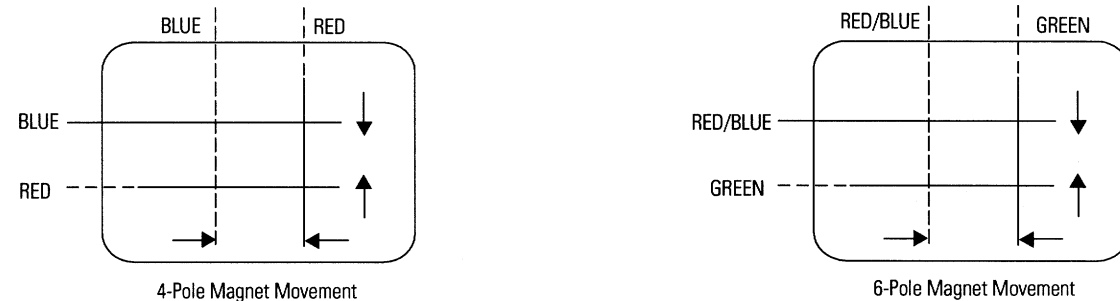


Fig. 3 Center Convergence Adjustment



Fig. 4 Circumference Convergence Adjustment

CIRCUIT DESCRIPTION

Circuit Description

Tuner

The function of the tuner is to select the channel to be received and suppress the interference, amplify the high frequency signal, improve the receiving sensitivity and SNR, and to generate PIF signal through frequency conversion.

IF Channel

The IF Channel mainly ensures the sensitivity and selectivity of the complete instrument. The IF AMP integrated in TMPA8802 is made up of the third-stage dual-differential amplifier with gain value above 70db, SNR of 55dB and bandwidth of 6MHZ. The video demodulation circuit is made from the built-in PLL Sync Detector. The spectrum of the demodulation carrier is unitary and not affected by the content of the video signal.

The PLL built-in the TMPA8802 generates 45.75MHz demodulation reference signal for sync detector to demodulate the video signal, which is called 'PLL sync demodulation'.

Chroma Signal Decoding Circuit

The external BPF (band-pass filter) singles out the chroma signal and burst signal within the range of $f_{sc} + 1.3\text{MHz}$ from among the composite signals output from the video detector. After being amplified by ACC, the chroma signal is fed into the synchronous detector to be demodulated to obtain the color difference signal.

Luminance Channel and Matrix Circuit

The luminance channel of TMPA8802 has a black stretch circuit to make dark picture content darker thus improving the contrast and depth perception of the picture. It also has the delayed definition-enhanced circuit to enable the details of the picture seem more vivid. The luminance signal (Y) is sent into the matrix circuit after being delayed for 0.6 s and composes R/G/B signal combined with the three color-difference signals (B-Y, R-Y, G-Y).

Sync Separation and Deflection Processing Circuit

TMPA8802 has the 32fh PLL (fh = horizontal frequency). In reference to the frequency and phase information carried by the composite sync signal, the PLL generates a scan clock

signal with 32fh and a horizontal drive pulse that will be obtained through 32fh countdown. An integrating circuit is used to extract vertical sync from the composite sync pulse to control the counter for vertical countdown. The circuit countdowns the 32fh clock signal, thus vertical frequency sync pulses under various systems can be obtained.

TMPA8802 includes the vertical SW former (sawtooth wave former) and can control the gain and linearity of the SW (sawtooth wave).

Sound Channel

The second SIF goes via a filter of 4.5MHz, to MSP3425. The MSP3425 then decodes the SIF into MONO, STEREO or SAP. MONO, STEREO, SAP and sound effect processing modes are adjusted via the IIC bus.

Remote Control System

The MCU (TMPA8802) of an 8-bit CPU and the software constitute the control core of the remote control system, mainly accomplishing the following functions: decoding remote control commands; auto search memory; displaying characters and patterns; switching the signal source between AV and TV. The transmitter translates the commands from the buttons and separately demodulates the 37.9KHZ carrier and 940nm infrared ray to generate the infrared transmitting signal at the LED. The remote control system has three operating modes: user-controlled mode (U-mode), service mode (S-mode) and factory default mode (D-mode). U-mode includes the following functions: channel search and memory; channel selecting; volume control, brightness adjustment, contrast and color adjustment. S-mode and D-mode are mainly used in production, checking & repairing, including the following functions: horizontal & vertical centering control, vertical amplitude and linearity adjustment; setting the adjusting range for volume, contrast, brightness, tint and color; geometric adjustment and white balance adjustment.

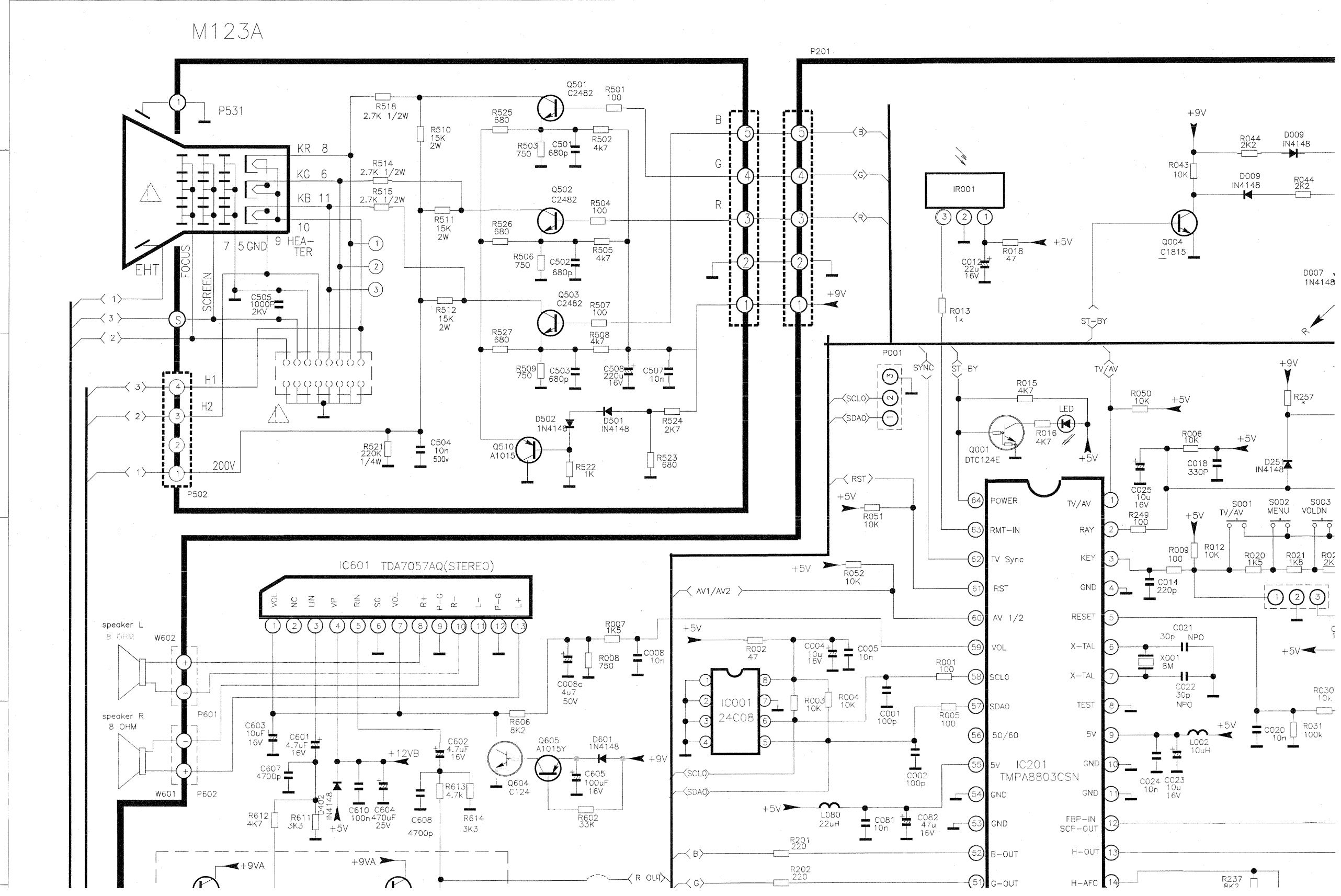
CRT Drive Circuit

A cascode amplifier is used to amplify the voltage and current of the R/G/B signal so the CRT drive circuit can demodulate the cathode beam current of the CRT. The R/G/B signal input into the cascode circuit is of negative polarity.

MAIN SCHE

1 2 3 4 5 6 7

A
B
C
D
E



HEMATIC

8

9

10

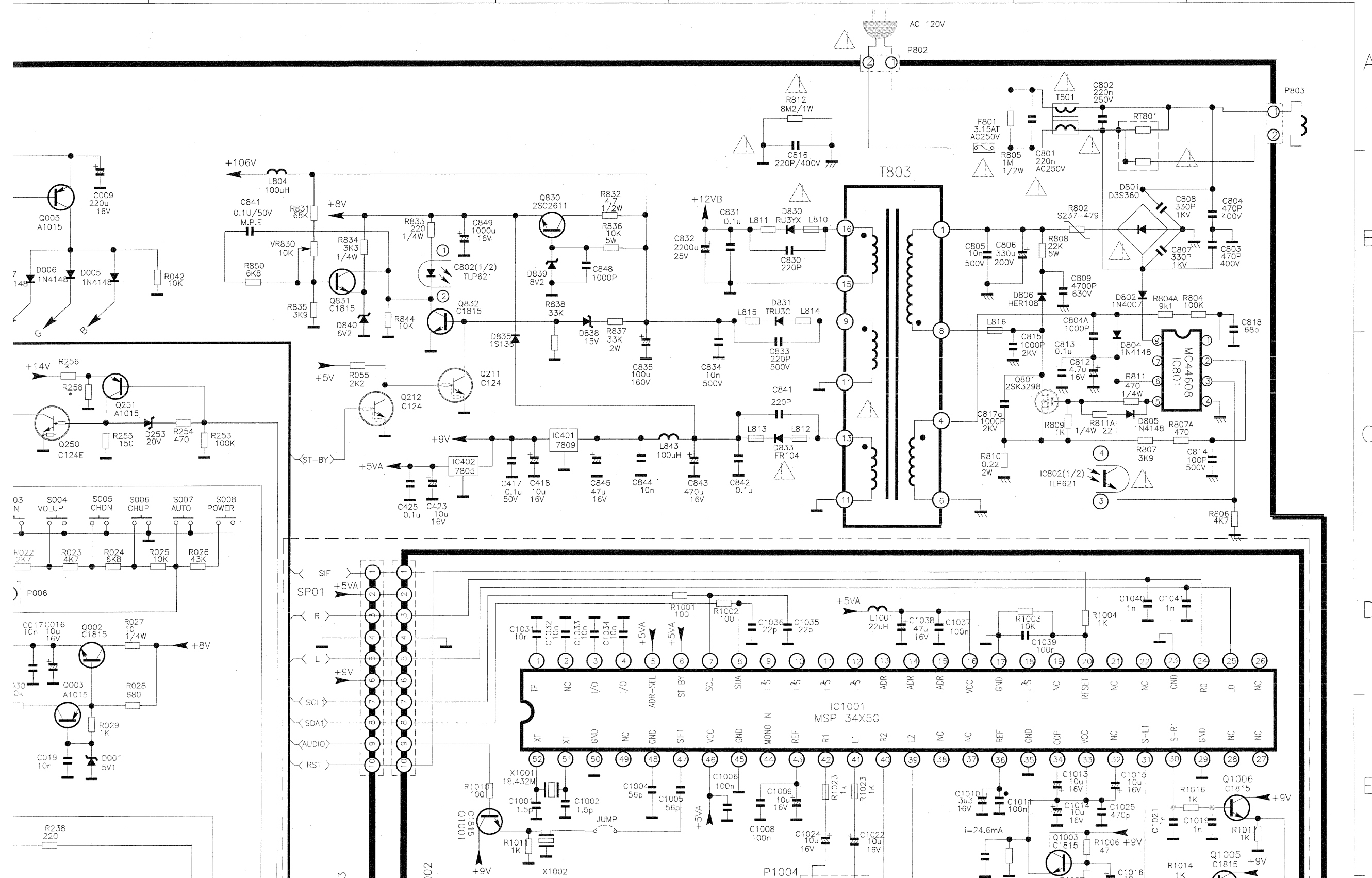
11

12

10

11

12



A

B

C

D

E

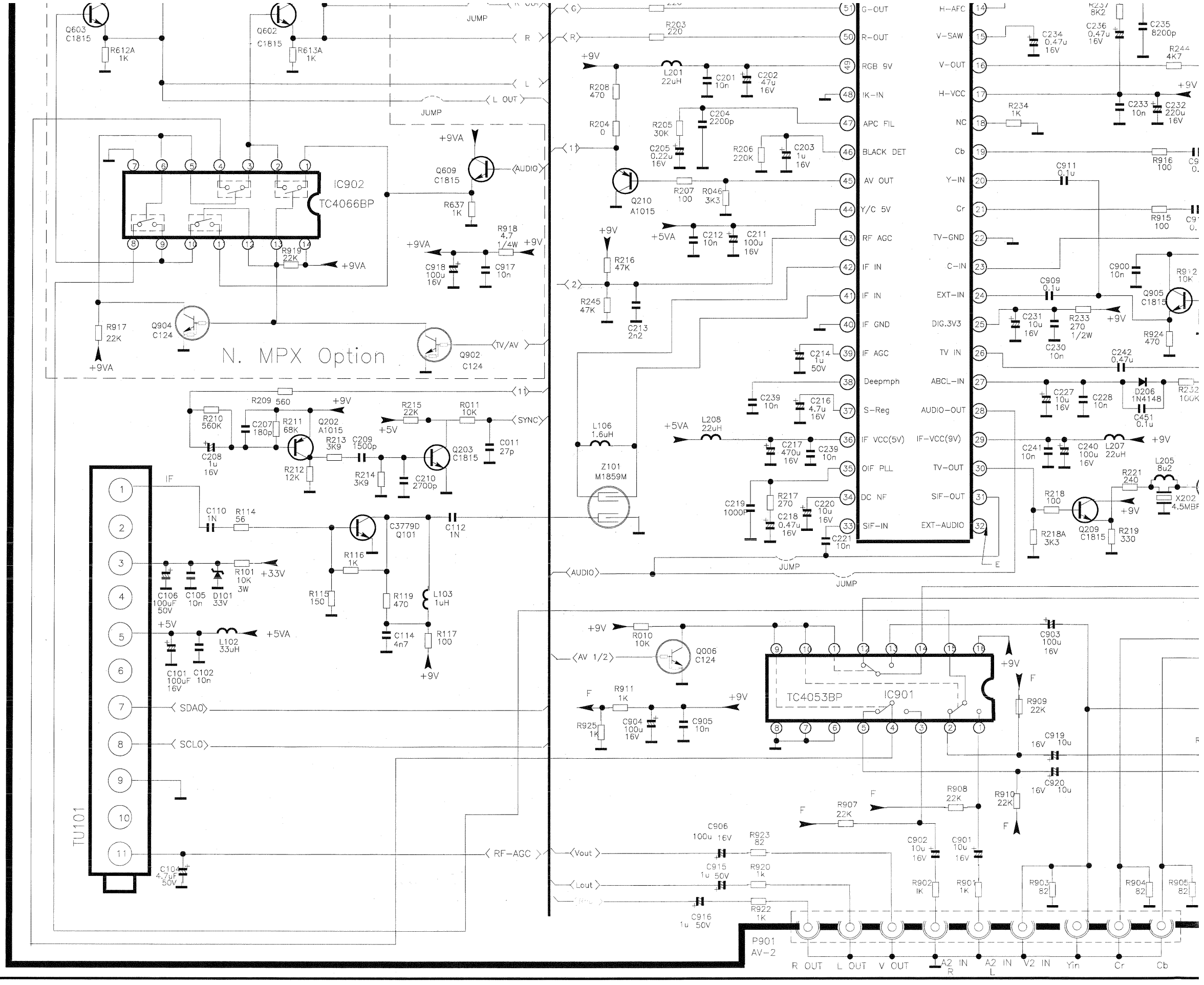
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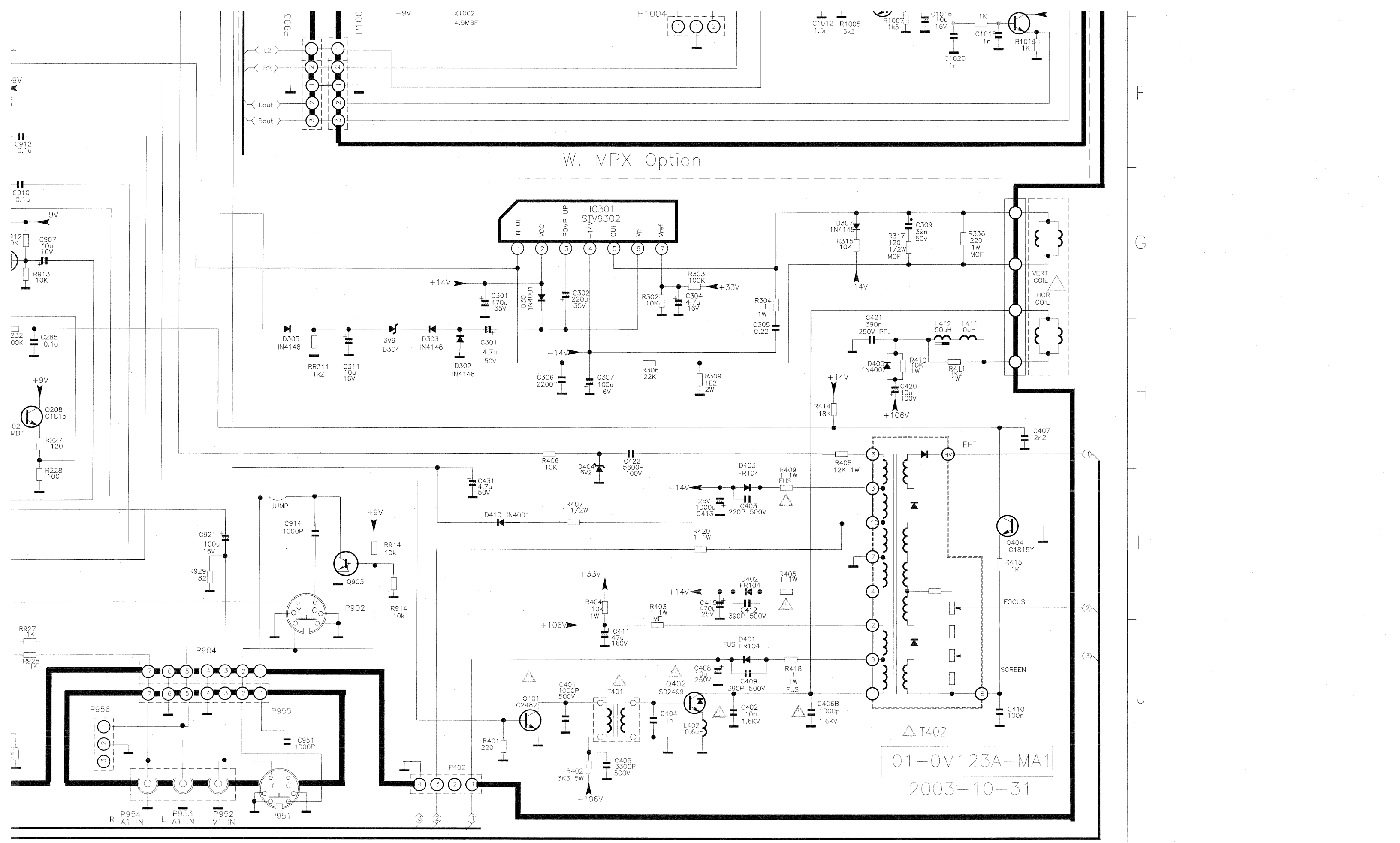
G

H

I

J

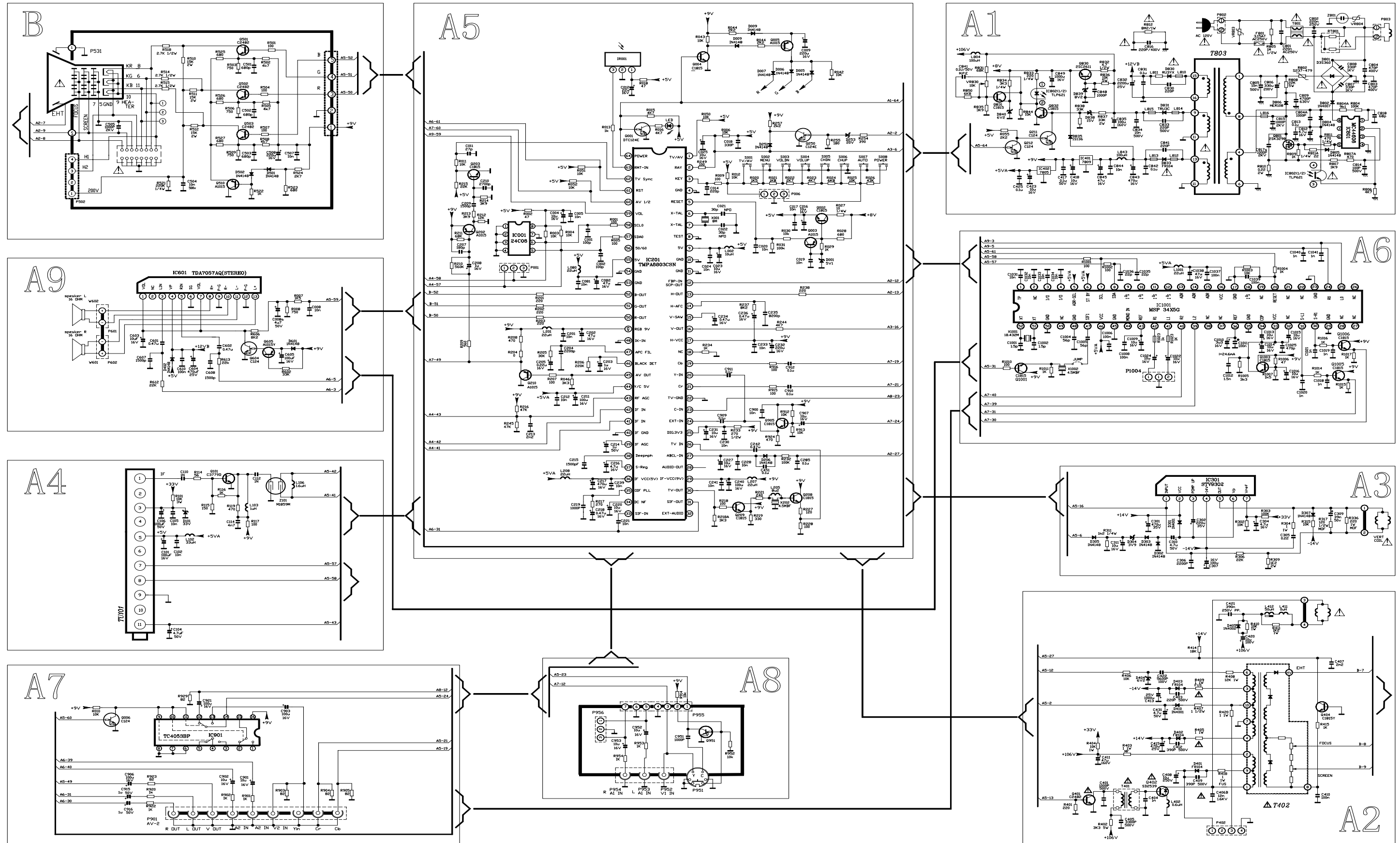




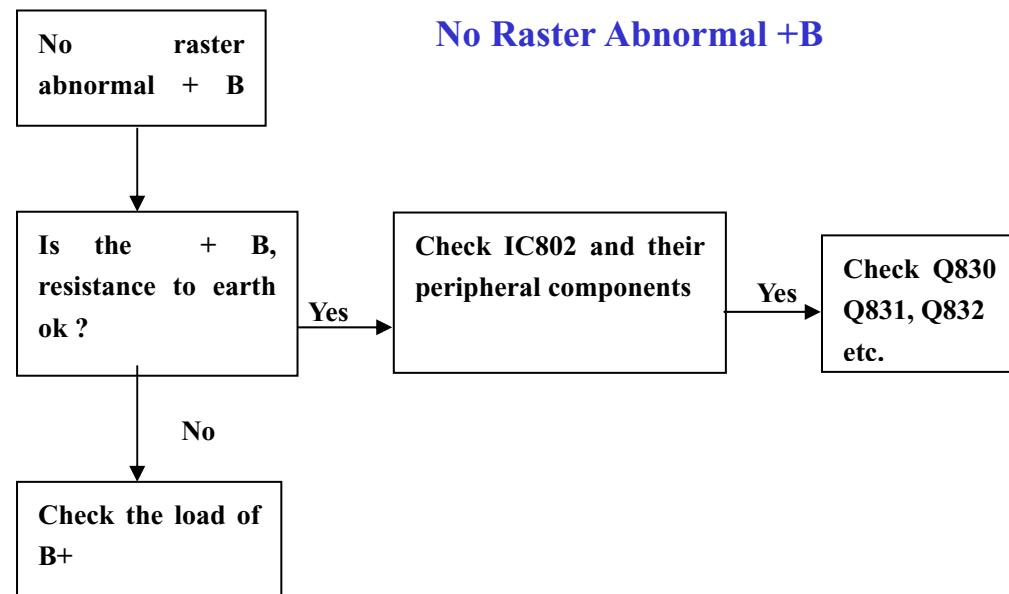
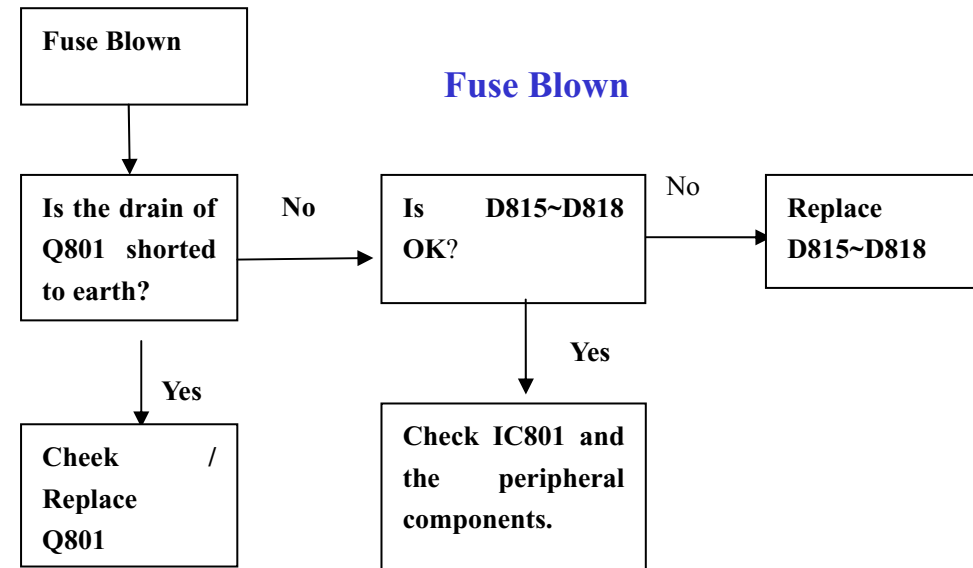
W. MPX Option

01-0M123A-MA1
2003-10-31

BLOCK DIAGRAM

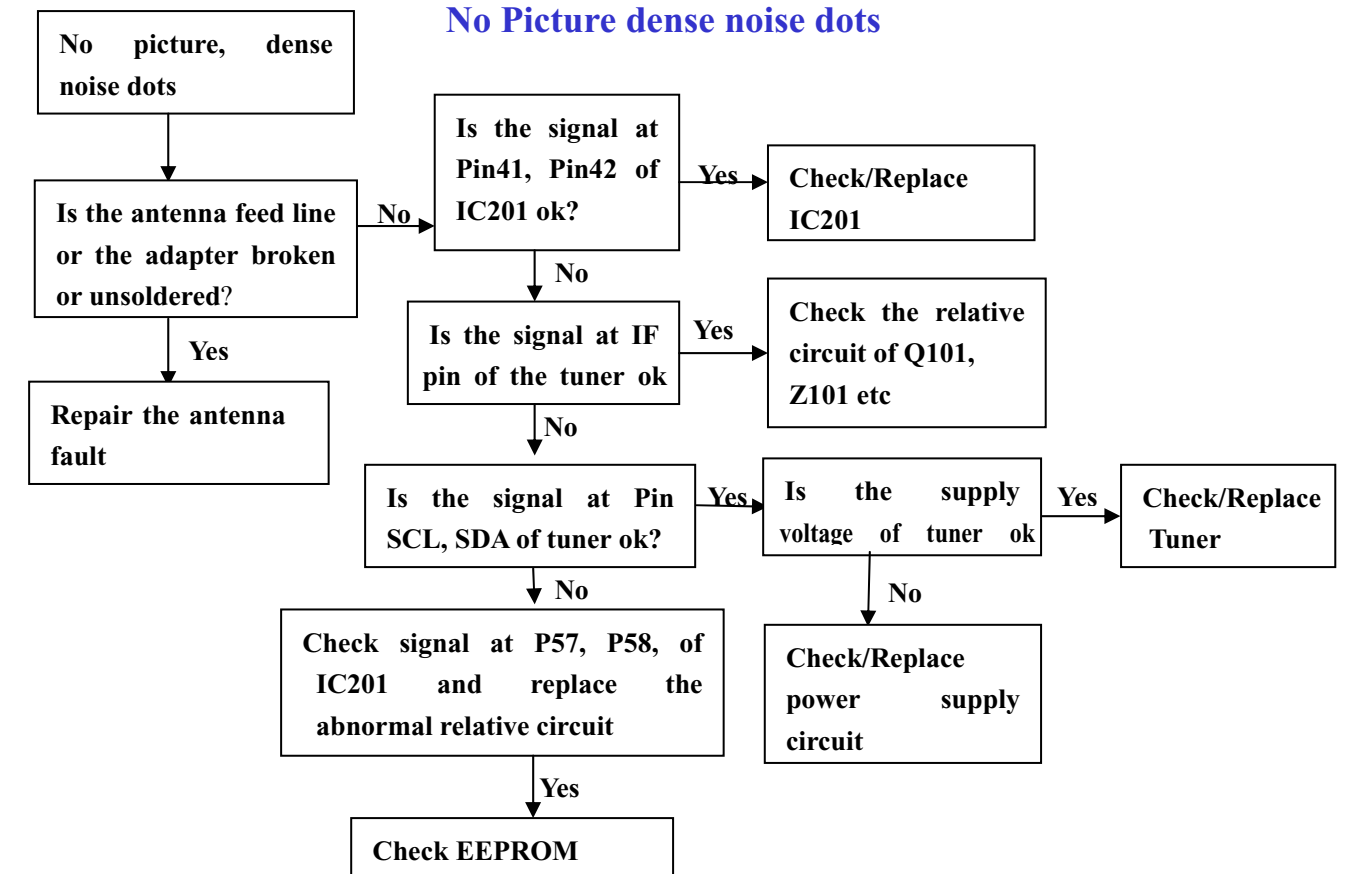
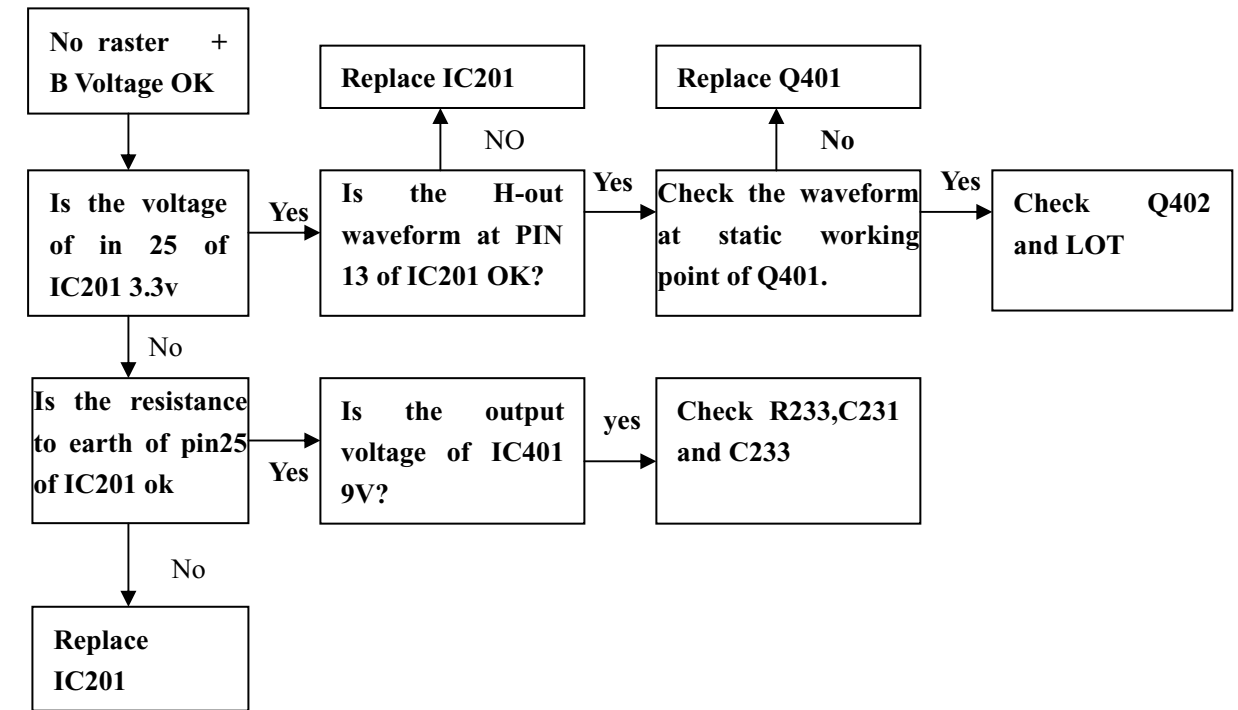


TROUBLESHOOTING CHARTS

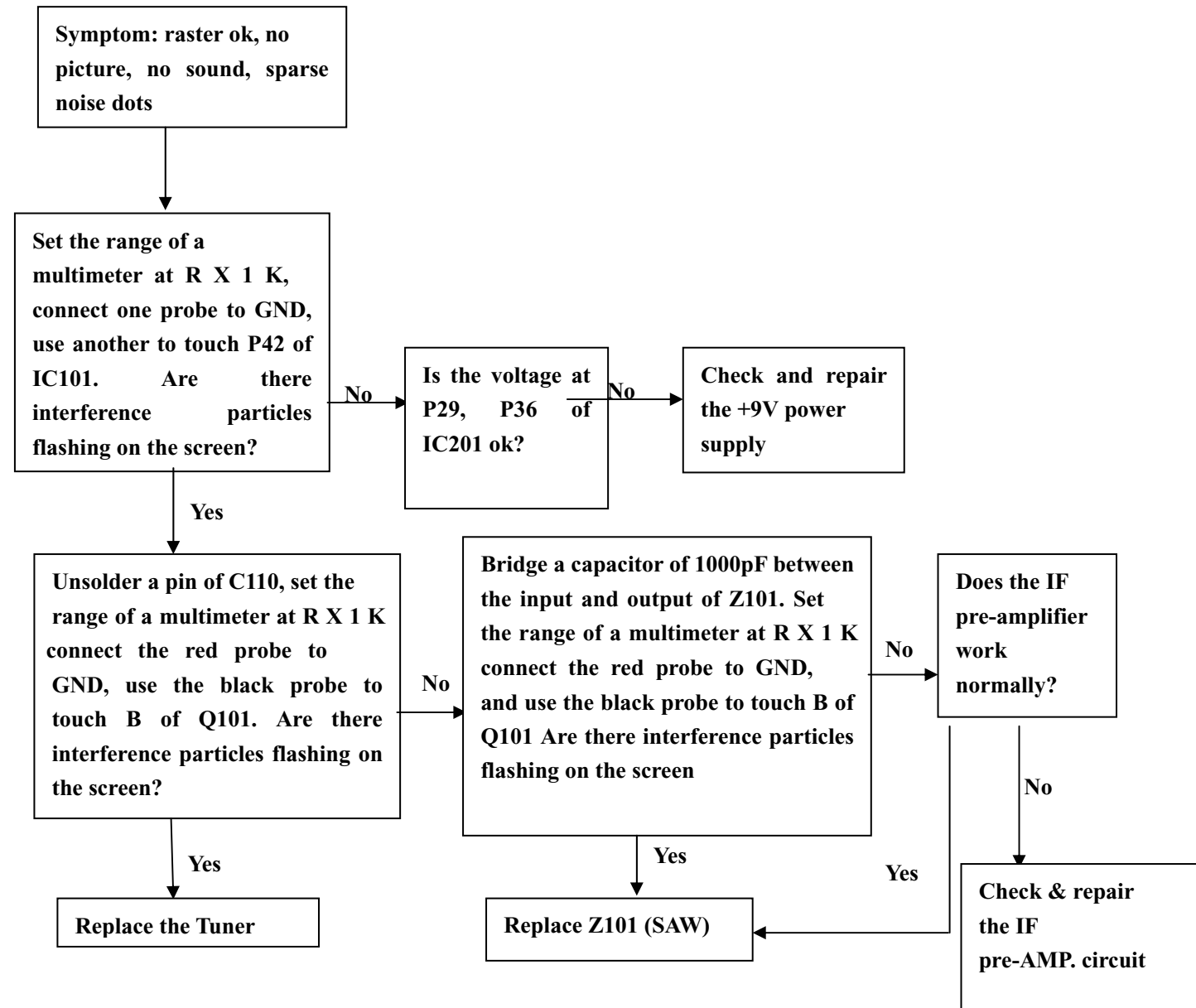


TROUBLESHOOTING CHARTS (Continued)

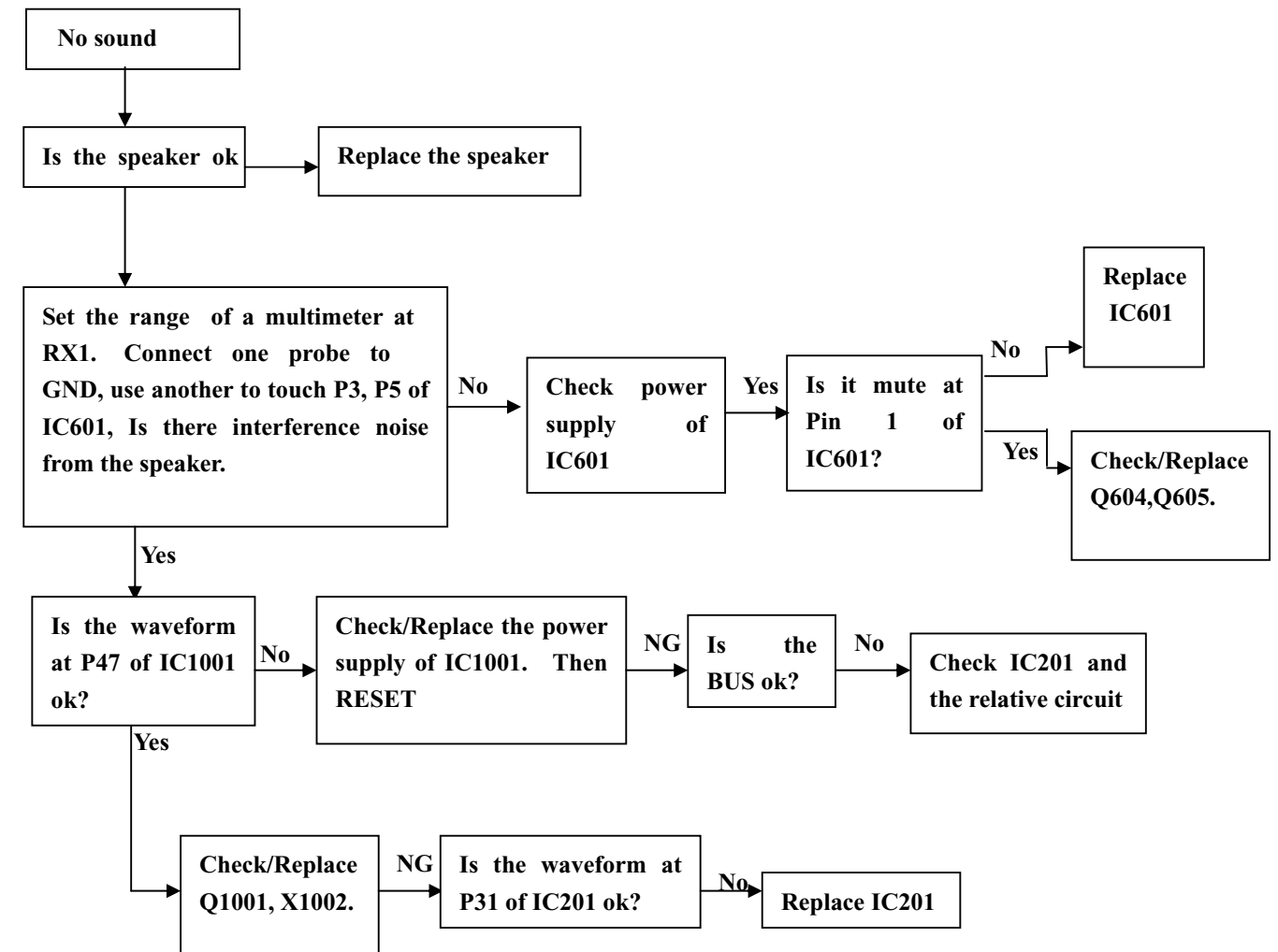
No Raster, +B OK



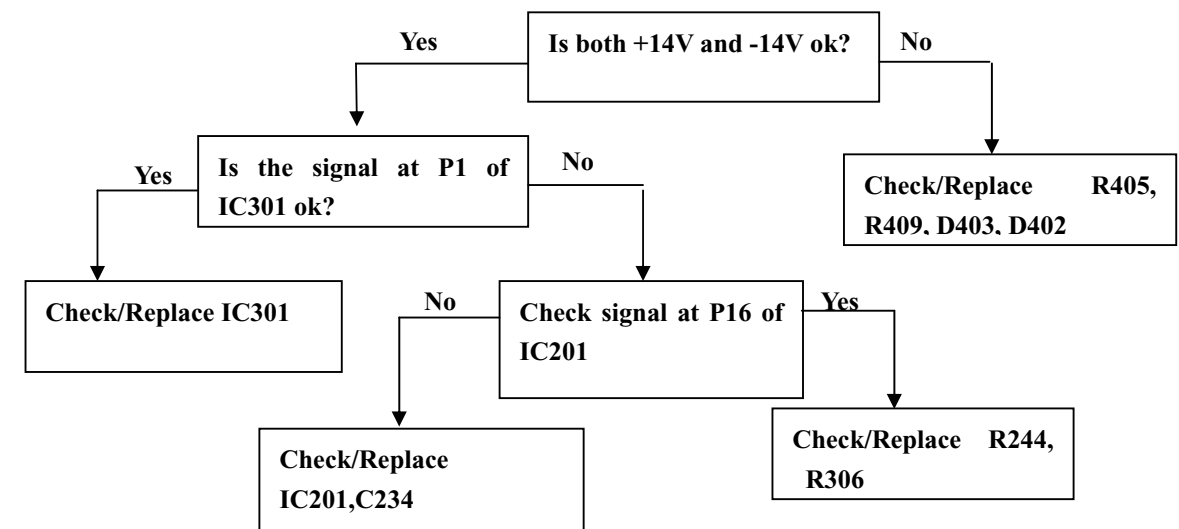
Sparse noise dots



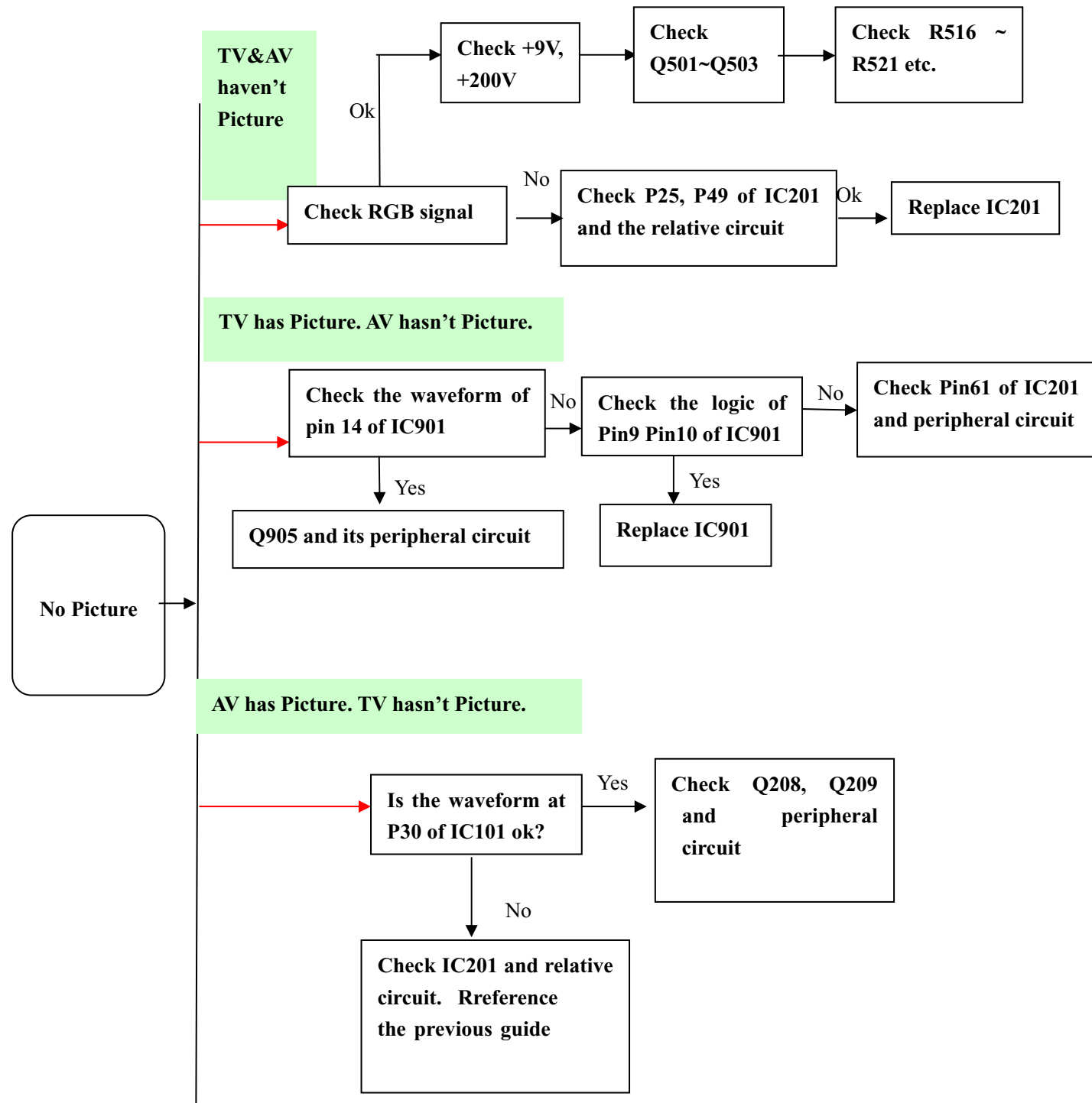
No Sound



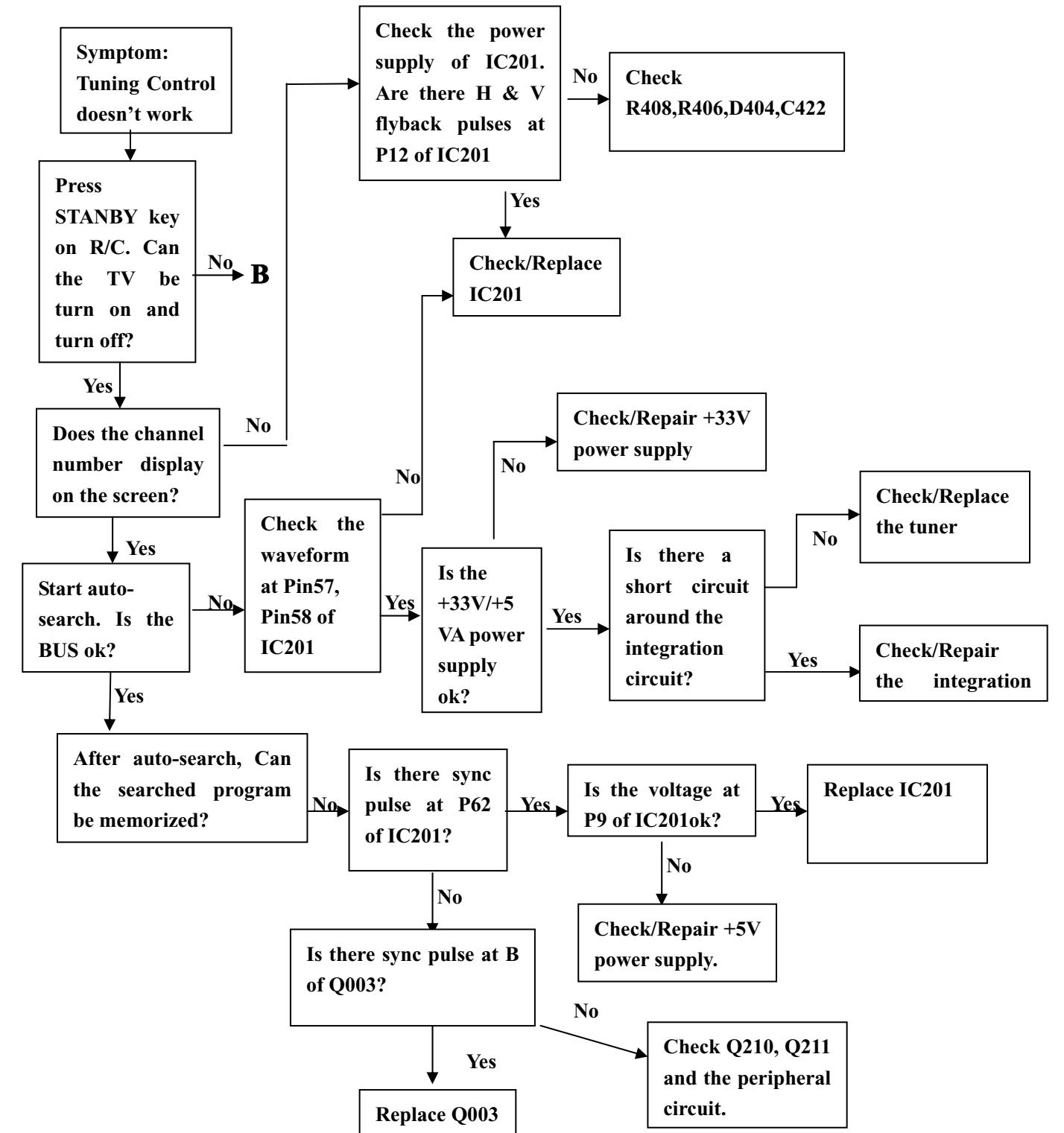
No Vertical Scan



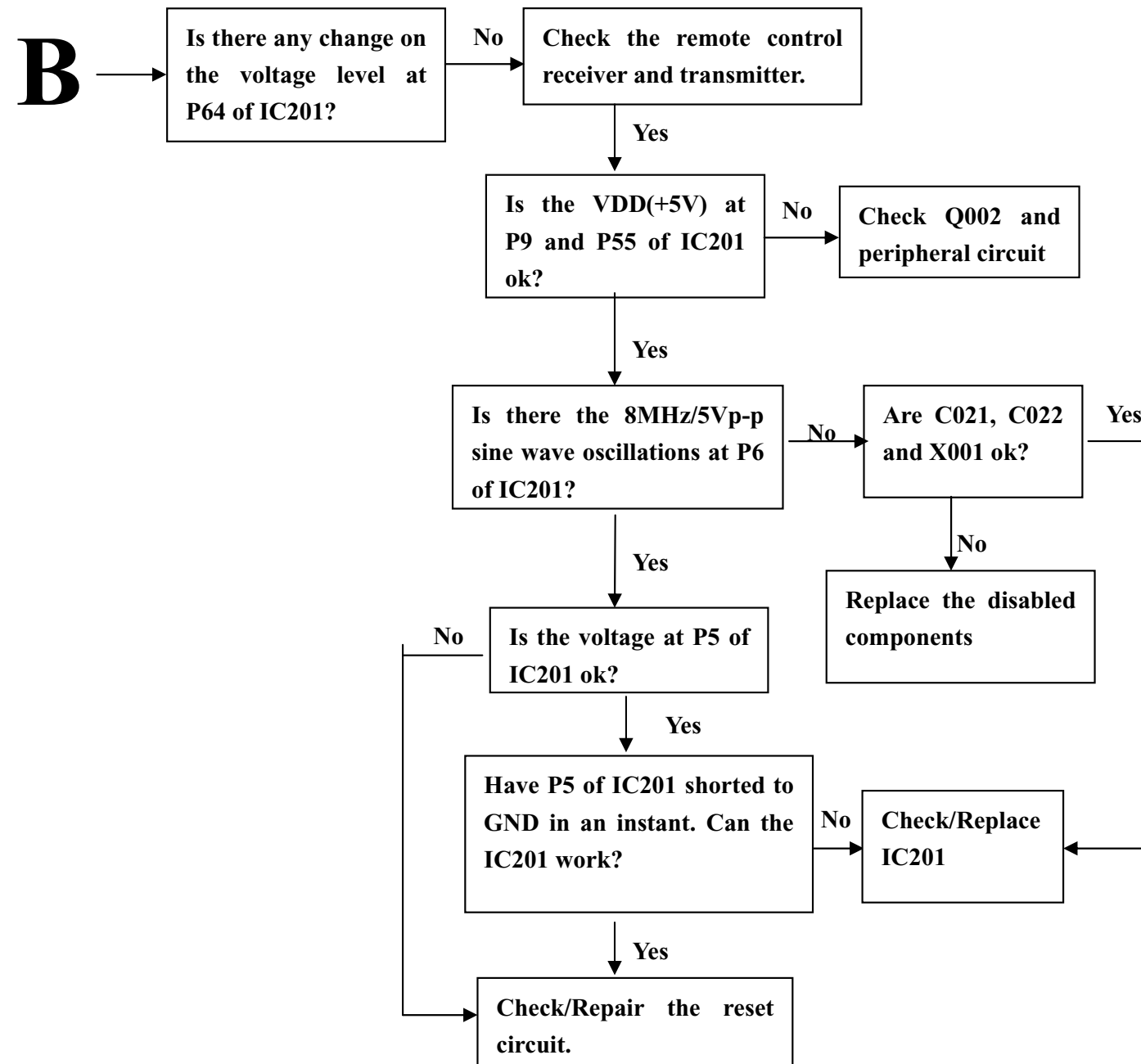
No Picture



Tuning Control Does Not Work



Tuning Control Does Not Work (Continued)



Item No.	Pin	Voltage	Item No.	Pin	Voltage	Item No.	Pin	Voltage
Q501	B	2.7V	Q202	B	9.0V	Q001	B	0.0V
	C	164.0V		C	2.0V		C	5.0V
	E	2.4V		E	8.8V		E	0.0V
Q502	B	2.6V	Q203	B	0.0V	Q004	B	0.0V
	C	171.0V		C	4.5V		C	8.8V
	E	2.3V		E	0.0V		E	0.0V
Q503	B	2.5V	Q210	B	1.8V	Q005	B	8.1V
	C	177.0V		C	0.0V		C	3.0V
	E	202.0V		E	2.5V		E	8.5V
Q510	B	0.8V	Q209	B	4.9V	Q211	B	4.9V
	C	0.0V		C	8.8V		C	0.0V
	E	1.5V		E	4.2V		E	0.0V
Q830	B	8.3V	Q208	B	4.9V	Q212	B	0.0V
	C	106.0V		C	8.8V		C	5.0V
	E	12.0V		E	3.5V		E	0.0V
Q831	B	6.7V	Q002	B	5.8V	Q801	G	2.8V
	C	10.4V		C	11.8V		D	127.0V
	E	6.1V		E	5.1V		S	0.05V
Q832	B	0.0V	Q003	B	5.0V	Q401	B	0.4V
	C	10.4V		C	5.8V		C	39.9V
	E	0.0V		E	5.8V		E	0.0V
Q101	B	0.7V	Q250	B	0.0V	Q402	B	0.05V
	C	6.0V		C	8.9V		C	106.0V
	E	0.0V		E	0.0V		E	0.0V

IC VOLTAGE CHARTS

0 V	64	POWER	TV/AV	1	0 V
5.0V	63	RMT-IN	RAY	2	5.1V
4.5V	62	TV Sync	KEY	3	5.1V
4.7V	61	RST	GND	4	0 V
0 V	60	AV 1/2	RESET	5	5.2V
2.0V	59	VOL	X-TAL	6	2.2V
4.2V	58	SCL0	X-TAL	7	2.0V
4.5V	57	SDA0	TEST	8	0 V
5.1V	56	50/60	5V	9	5.1V
5.1V	55	5V	GND	10	0 V
0 V	54	GND	GND	11	0 V
0 V	53	GND	FBP-IN SCP-DUT	12	1 V
2.5V	52	B-DUT	H-DUT	13	1.5V
2.7V	51	G-DUT	H-AFC	14	6.0V
2.6V	50	R-DUT	V-SAW	15	4.1V
8.8V	49	RGB 9V	V-DUT	16	5.1V
0 V	48	IK-IN	H-VCC	17	0 V
2.5V	47	APC FIL	NC	18	0 V
1.8V	46	BLACK DET	Cb	19	2.3V
1.8V	45	AV OUT	Y-IN	20	2.6V
4.8V	44	Y/C 5V	Cr	21	2.3V
4.4V	43	RF AGC	TV-GND	22	0 V
0 V	42	IF IN	C-IN	23	2.3V
0 V	41	IF IN	EXT-IN	24	0 V
0 V	40	IF GND	DIG.3V3	25	3.4V
4.1V	39	IF AGC	TV IN	26	2.3V
4.5V	38	Deepmph	ABCL-IN	27	4.6V
2.2V	37	S-Reg	AUDIO-DUT	28	3.5V
4.8V	36	IF VCC(5V) IF-VCC(9V)		29	8.8V
2.5V	35	DIF PLL	TV-DUT	30	4.9V
2.1V	34	DC NF	SIF-DUT	31	1.8V
2.7V	33	SIF-IN	EXT-AUDIO	32	4.3V

XT	TP	1
XT	NC	2
GND	I/O	3
NC	I/O	4
GND	ADR-SEL	5
SIF1	ST BY	6
VCC	SCL	7
GND	SDA	8
MONO IN	I ² S	9
REF	I ² S	10
R1	I ² S	11
L1	I ² S	12
R2	ADR	13
L2	ADR	14
NC	ADR	15
NC	VCC	16
REF	GND	17
GND	I ² S	18
GDP	NC	19
VCC	RESET	20
NC	NC	21
S-L1	NC	22
S-R1	GND	23
GND	RO	24
NC	LO	25
NC	NC	26

0.8V	1	VOL
0.4V	2	NC
2.4V	3	LIN
1.4V	4	VP
2.4V	5	RIN
0 V	6	SG
0.8V	7	VOL
6.3V	8	R+
0 V	9	P-G
6.5V	10	R-
6.5V	11	L-
0 V	12	P-G
6.5V	13	L+

3.0V	1	INPUT
13.2V	2	VCC
-11.6V	3	POMP UP
-13.1V	4	-14V
0.2V	5	OUT
13.5V	6	Vp
3.0V	7	Vref

0 V	E0	1	VCC	5 V
0 V	E1	2	WC	0 V
0 V	E2	3	SCL	4.5 V
0 V	VSS	4	SDA	4.5 V

E0 E1 E2	Chip Enable Inputs
SDA	Serial Data/Address Input/Output
SCL	Serial Clock
WC	Write Control
Vcc	Supply Voltage
Vss	Ground

IC VOLTAGE CHARTS

9 V	1	0V
0 V	2	0V
4.5 V	3	0V
4.5 V	4	0V
4.5 V	5	0V
0~9 V	6	0V
0~9 V	7	0V
0~9 V	8	0V

61.5 V	8	1 0V
0 V	7	2 0V
13.2 V	6	3 5V
4.5 V	5	4 0V

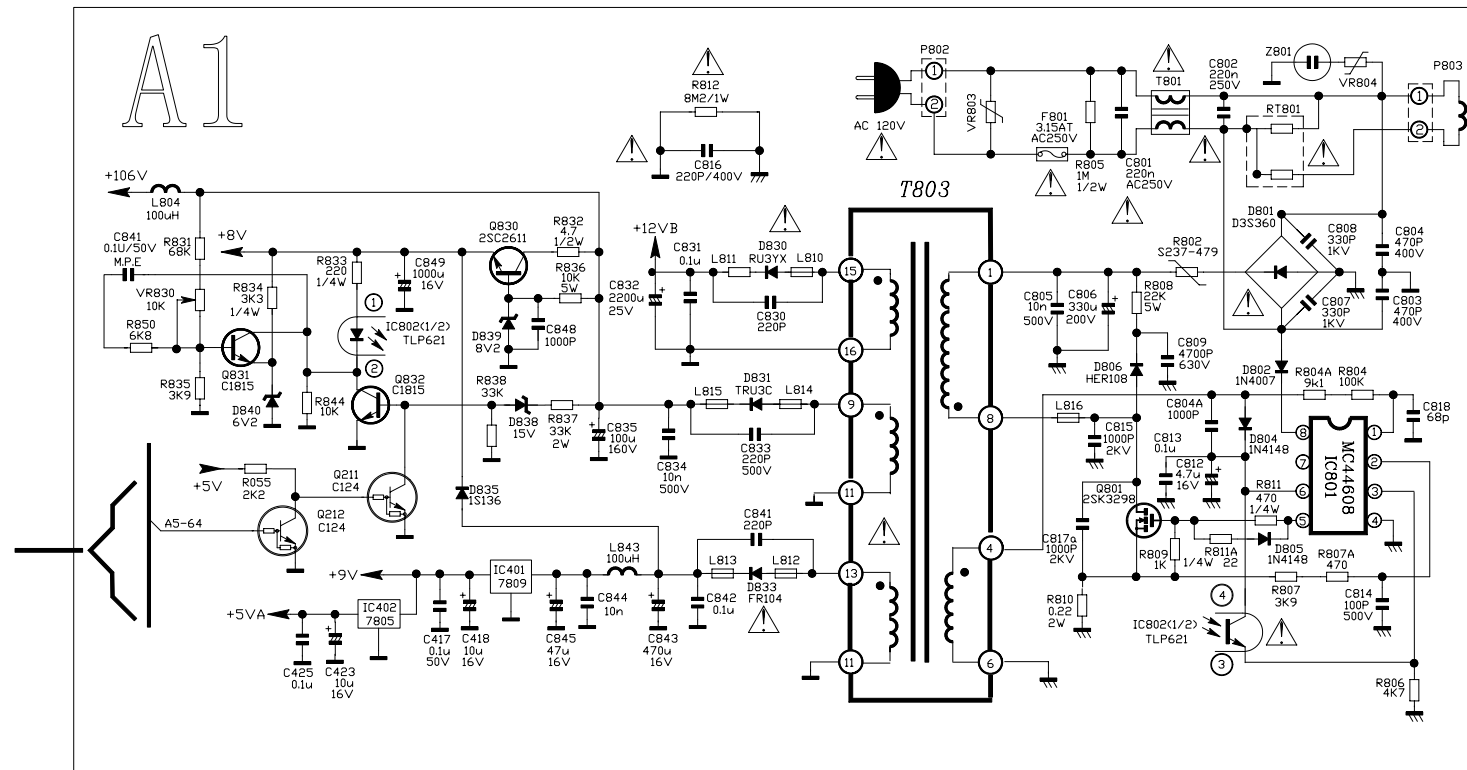
Pin No.	SYMBOL	Name and Function
11,10,9	A, B, C	Binary Control Inputs
6	INH	Inhibit Inputs
12,13,2,1,5,3	IN/OUT	ax, ay, bx, by, cx, cy Input/Output
14	OUT/IN	ax or ay
15	OUT/IN	bx or by
4	OUT/IN	cx or cy
7	Vee	Supply Voltage
8	Vss	Negative Supply Voltage
16	Vdd	Positive Supply Voltage

Pin No.	Name	Description
1	Demag	The Demag Pin offers 3 different functions: Zero Voltage crossing detection (50mV) 24 uA current detection and 120 uA current detection The 24 uA level is used to detect the secondary reconfiguration status and the 120 uA level to detect an Over Voltage status called Quick OVP.
2	Isense	The Current Sense pin senses the voltage developed on the series resistor inserted in the source of the power MOSFET.
3	Control Input	A feedback current from the secondary side of the SMPS via the opto-coupler is injected into this pin.
4	Ground	
5	Driver	
6	Vcc	
7		This pin is to provide isolation between the V1 pin 8 and Vcc Pin 6
8	V1	This pin can be directly connected to a 500V voltage for start-up function of the IC.

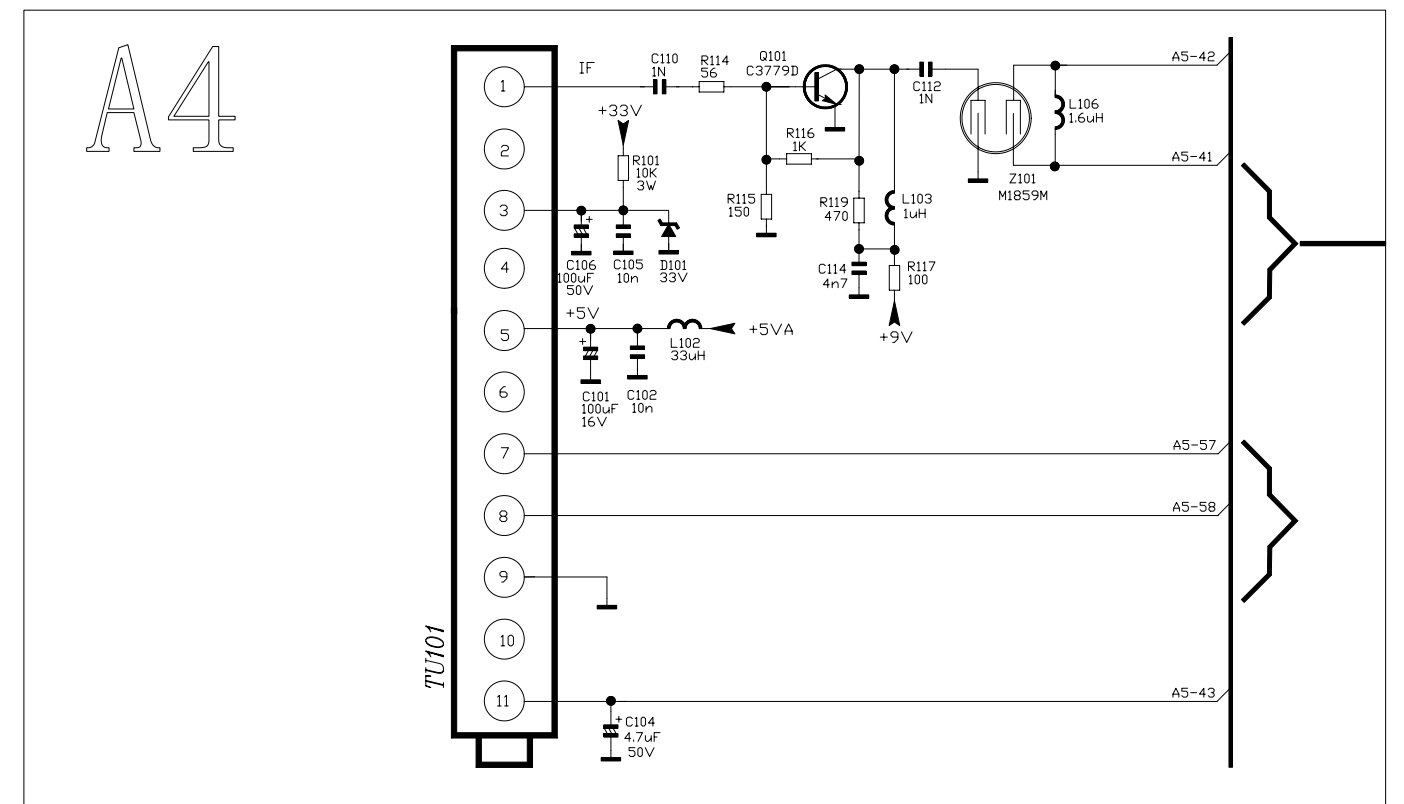
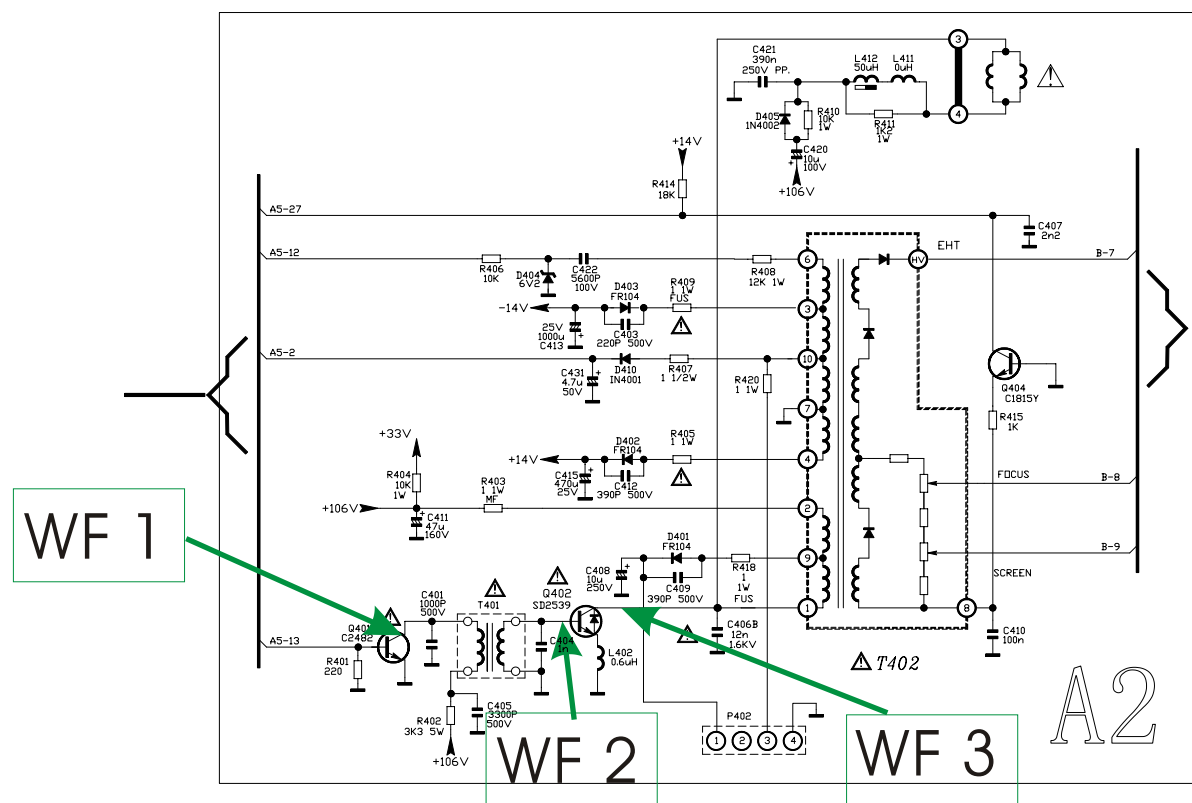
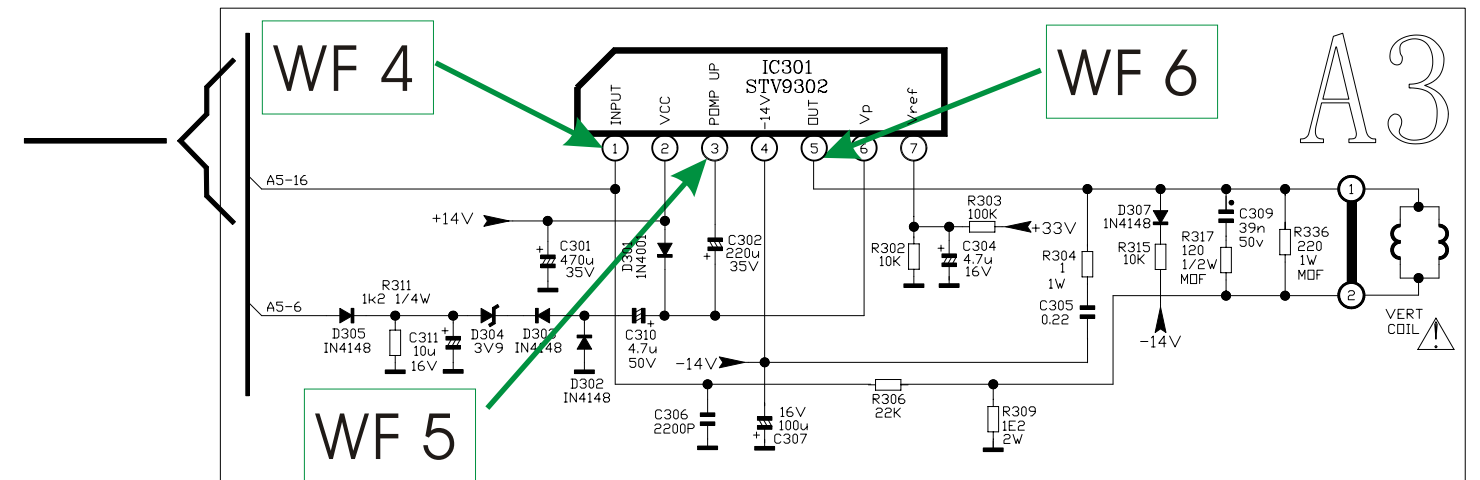
TRANSISTOR VOLTAGE CHARTS

Item No.	Pin	Voltage	Item No.	Pin	Voltage	Item No.	Pin	Voltage
Q501	B	2.7V	Q202	B	9.0V	Q001	B	0.0V
	C	164.0V		C	2.0V		C	5.0V
	E	2.4V		E	8.8V		E	0.0V
Q502	B	2.6V	Q203	B	0.0V	Q004	B	0.0V
	C	171.0V		C	4.5V		C	8.8V
	E	2.3V		E	0.0V		E	0.0V
Q503	B	2.5V	Q210	B	1.8V	Q005	B	8.1V
	C	177.0V		C	0.0V		C	3.0V
	E	202.0V		E	2.5V		E	8.5V
Q510	B	0.8V	Q209	B	4.9V	Q211	B	4.9V
	C	0.0V		C	8.8V		C	0.0V
	E	1.5V		E	4.2V		E	0.0V
Q830	B	8.3V	Q208	B	4.9V	Q212	B	0.0V
	C	106.0V		C	8.8V		C	5.0V
	E	12.0V		E	3.5V		E	0.0V
Q831	B	6.7V	Q002	B	5.8V	Q801	G	2.8V
	C	10.4V		C	11.8V		D	127.0V
	E	6.1V		E	5.1V		S	0.05V
Q832	B	0.0V	Q003	B	5.0V	Q401	B	0.4V
	C	10.4V		C	5.8V		C	39.9V
	E	0.0V		E	5.8V		E	0.0V
Q101	B	0.7V	Q250	B	0.0V	Q402	B	0.05V
	C	6.0V		C	8.9V		C	106.0V
	E	0.0V		E	0.0V		E	0.0V

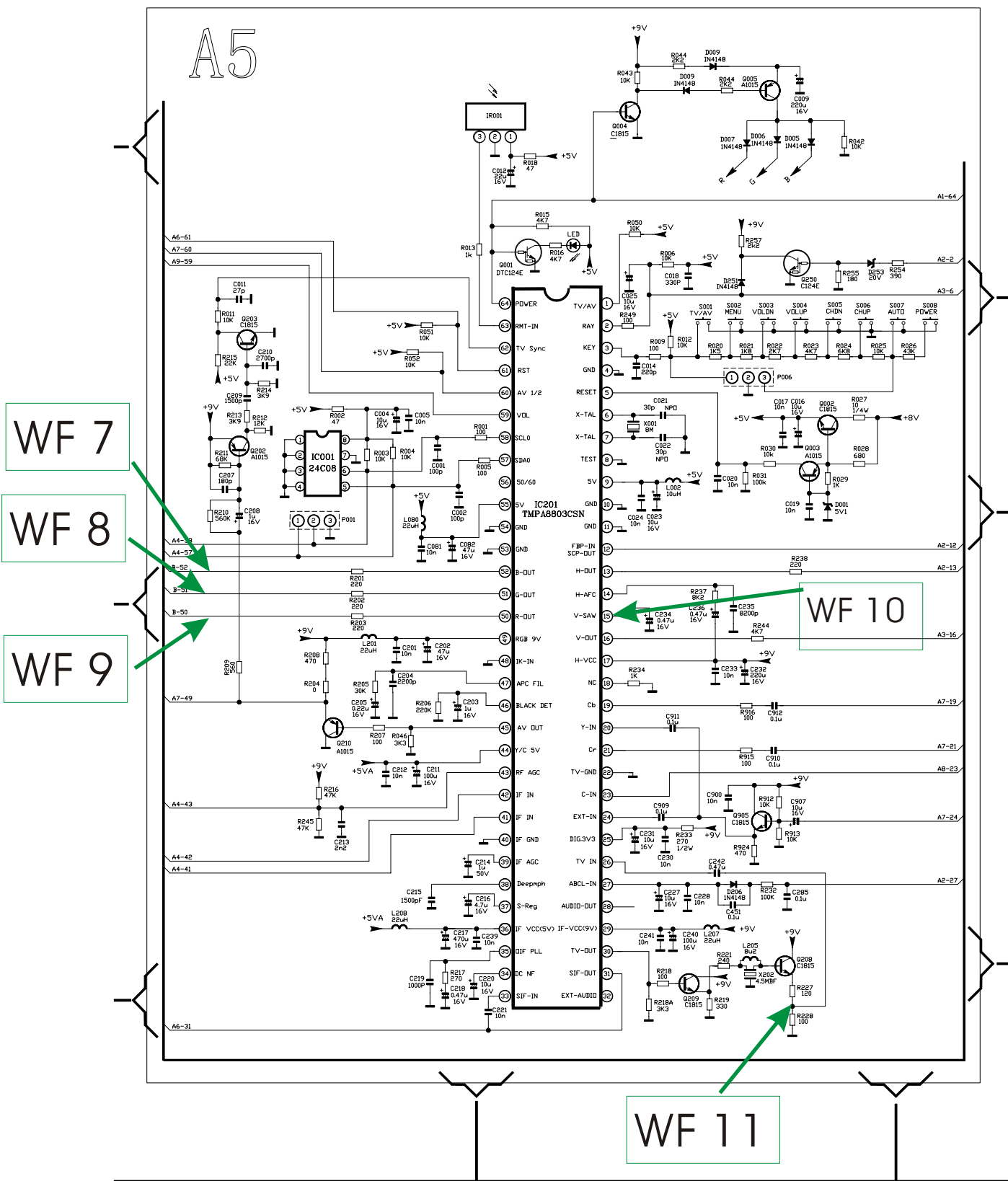
BLOCK DIAGRAM/WAVEFORM LOCATION



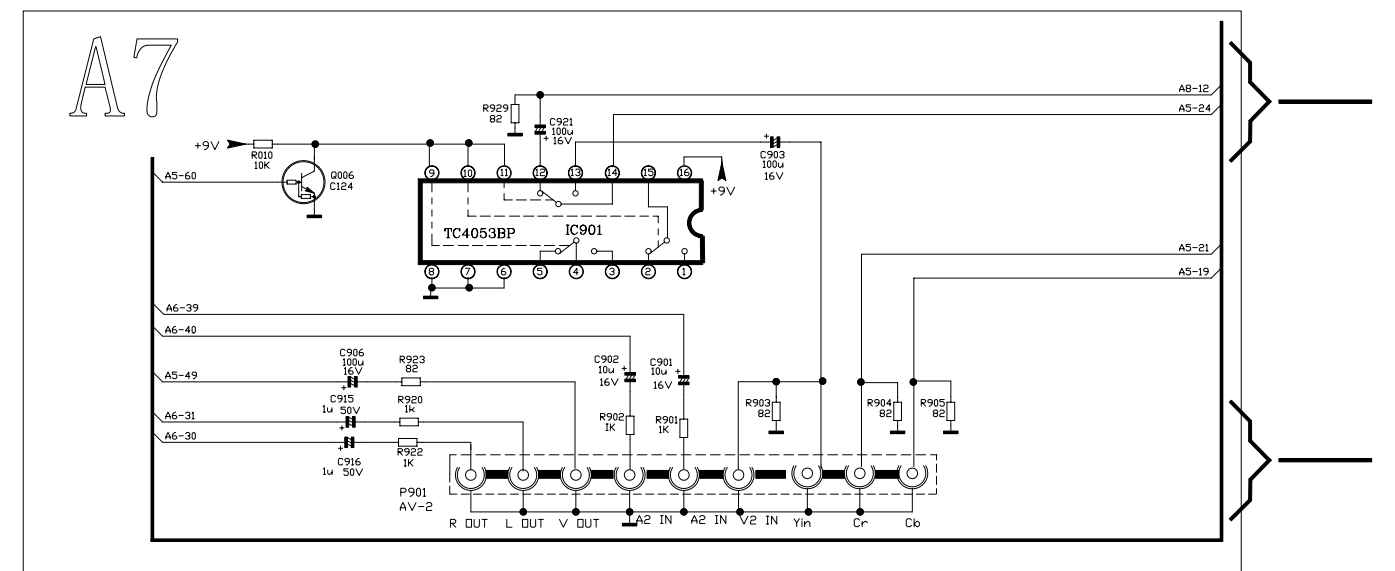
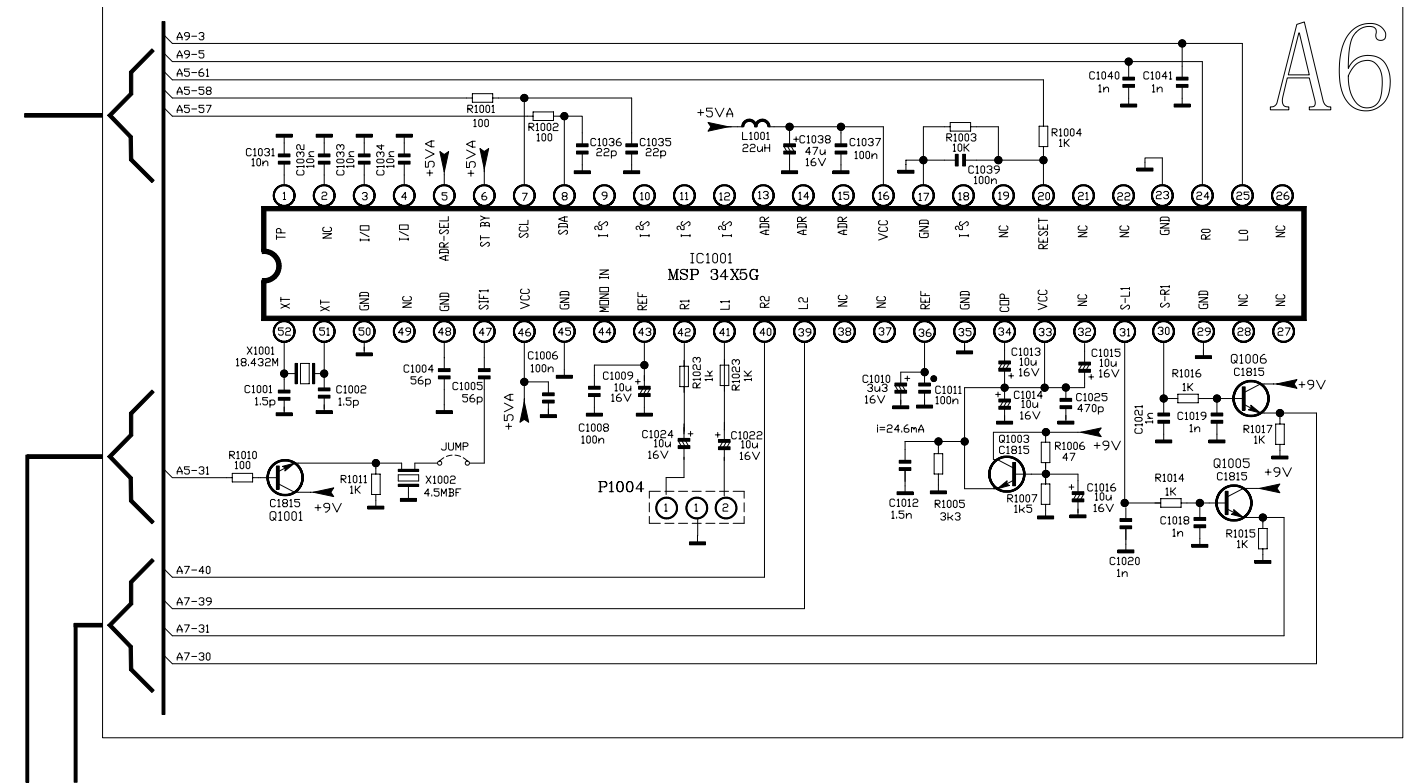
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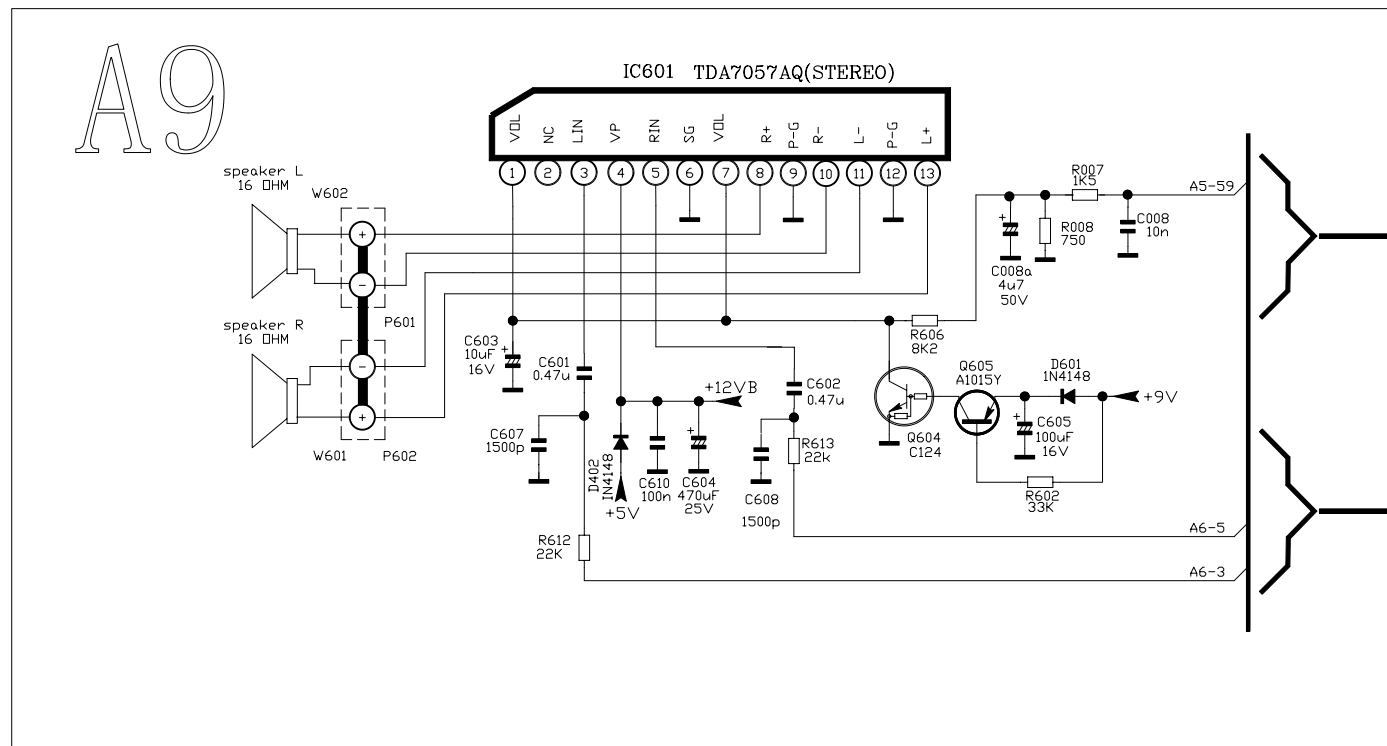
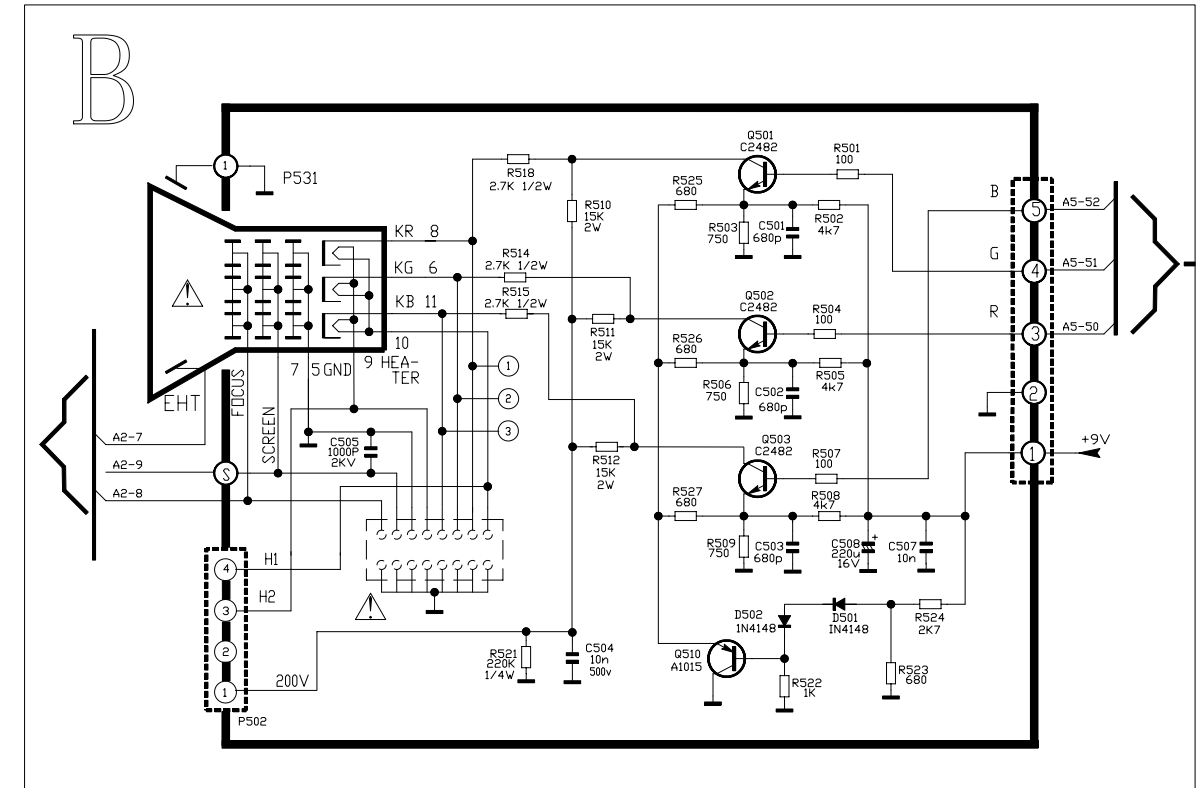
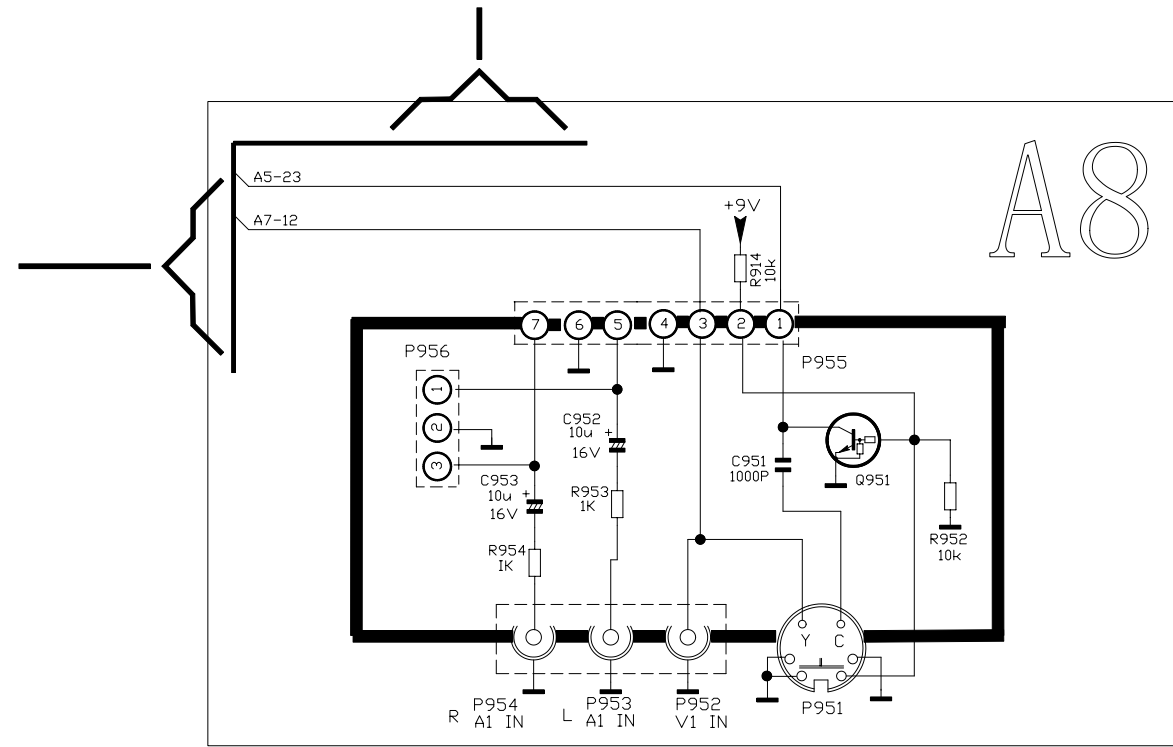


BLOCK DIAGRAM/WAVEFORM LOCATION (Continued)


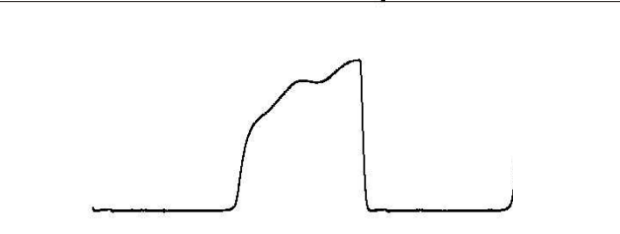
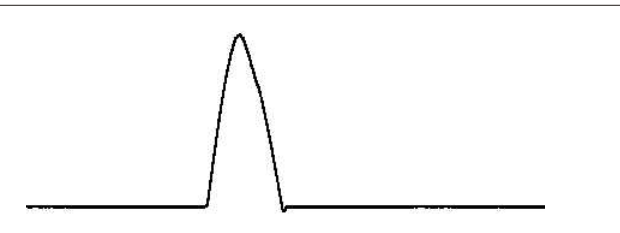
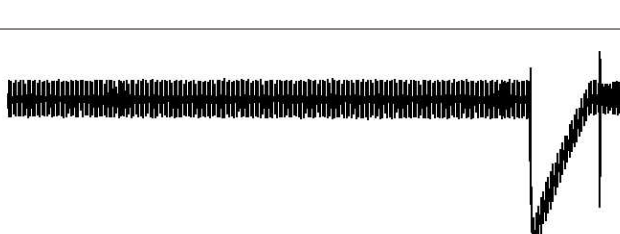
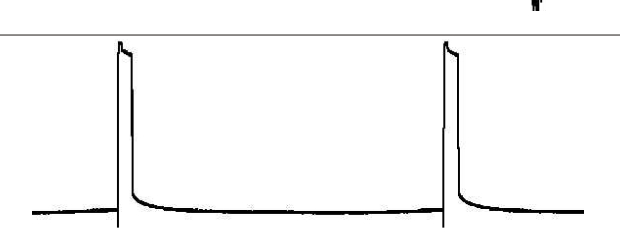
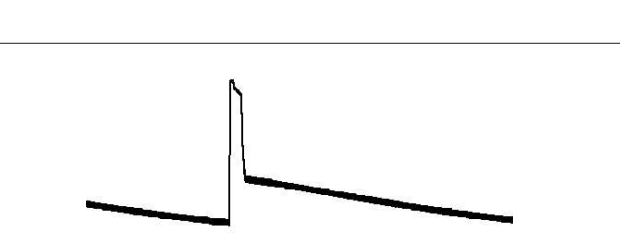


BLOCK DIAGRAM/WAVEFORM LOCATION (Continued)

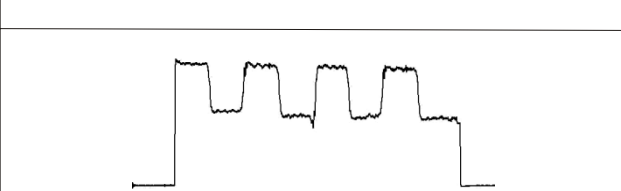
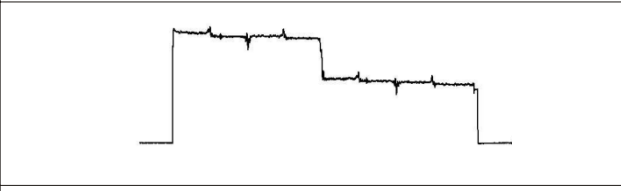

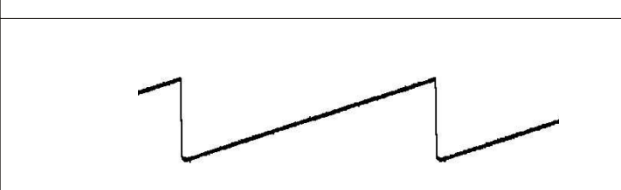
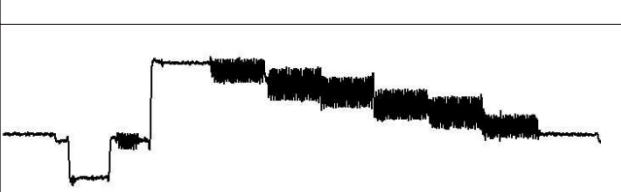




BLOCK DIAGRAM/WAVEFORM LOCATION (Continued)

NO .	Wave Shape	Freq. Hz	Period	Vpp
WF 1		15.74 kHz	64 us	2.77 V
WF 2		15.74 kHz	64 us	10.88 V
WF 3		15.74 kHz	64 us	925 V
WF 4		60 KHz	16.7 ms	135.7 mV
WF 5		60 KHz	16.7 ms	2.95 V
WF 6		60 KHz	16.7 ms	4.94 V

BLOCK DIAGRAM/WAVEFORM LOCATION (Continued)

NO .	Wave Shape	Freq. Hz	Period	Vpp
WF 7		15.74 kHz	64 us	345 mV
WF 8		15.74 kHz	64 us	319 mV
WF 9		15.74 kHz	64 us	314 mV
WF 10		60 KHz	16.7 ms	174 mV
WF 11		15.74 kHz	64 us	93.2 V

SAFETY PRECAUTIONS

DO NOT OPERATE THIS INSTRUMENT OR PERMIT IT TO BE OPERATED WITHOUT ALL PROTECTIVE DEVICES INSTALLED AND FUNCTIONING. SERVICERS WHO DEFEAT SAFETY FEATURES OR FAIL TO PERFORM SAFETY CHECKS MAY BE LIABLE FOR ANY RESULTING DAMAGE, AND MAY EXPOSE THEMSELVES AND OTHERS TO POSSIBLE INJURY.

READ AND COMPLY WITH ALL CAUTION AND SAFETY-RELATED NOTES ON OR INSIDE THE RECEIVER CABINET, AND THE RECEIVER CHASSIS, OR ON THE PICTURE TUBE.

SAFETY GLASSES SHOULD BE USED WHEN SERVICING ELECTRONIC INSTRUMENTS. INADVERTENTLY OVERSTRESSING COMPONENTS MAY CAUSE THEM TO SHATTER, DISCHARGING SMALL PARTICLES.

DESIGN ALTERATION WARNING - Do not alter or add to the mechanical or electrical design of this instrument. Design alterations and additions may alter the safety characteristics of this instrument and create a hazard to the user. Design alterations or additions may void the manufacturer's warranty and may make you, the servicer, responsible for personal injury or property damage resulting therefrom.

BEFORE RETURNING AN INSTRUMENT TO THE CUSTOMER, always make a safety check of the entire instrument, including, but not limited to, the following items:

FIRE AND SHOCK HAZARD

1. Never release a repaired unit unless all protective devices such as insulators, barriers, covers, strain reliefs and other protective hardware have been installed in accordance with the original design.
2. Be sure that there are no cabinet openings through which an adult or a child might be able to insert their fingers and contact a hazardous voltage. Such openings include, but are not limited to: (a) spacing between picture tube and cabinet mask, (b) excessively wide cabinet ventilation slots, and (c) an improperly fitted or incorrectly secured back cover or cabinet.
3. Observe original lead dress. Take care to restore leads to their original dress. Make sure that leads are not in contact with sharp edges or thermally hot parts. Always inspect in all areas for pinched, out-of-place or frayed wiring. Do not change spacing between adjacent components, or between components and printed circuit board. Check the AC power cord for damage.
4. Be certain to remove loose solder balls and all other loose foreign particles.
5. Check components, parts and/or wiring for physical evidence of damage, overheating or deterioration, and replace if necessary. Determine the cause of damage and/or overheating and, if necessary, take corrective action to remove any potential safety hazard.
6. Parts Replacement - Many instruments electrical and mechanical parts have special safety-related characteristics, some of which are often not evident from visual inspection, and the protection they give cannot necessarily be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified in this service data by a (⚡) on schematics and in the parts list. Use of a substitute replacement that does not have the same safety characteristics as the recommended replacement part in the service data parts list may create shock, fire and/or other hazards. Always consult the appropriate current service literature for the latest information.
7. Some instruments chassis' normally have 85VAC (RMS) between chassis and earth ground, regardless of the AC plug polarity. Some instrument chassis' are electrically connected directly to one conductor of the AC power cord. Some instrument chassis' have a secondary ground system in addition to the main chassis ground. This secondary ground system is not isolated from the AC power line. The two ground systems are electrically separated by insulating material that must not be defeated or altered. Thus, when servicing any unit always use a separate isolation transformer for the chassis. Failure to use a separate isolation transformer may expose the servicer to possible shock hazard, and may cause damage to servicing instruments.
8. Many electronic products use a polarized AC line cord (one wide pin on the plug). Defeating this safety feature may create a potential hazard to the servicer and the user. Extension cords that do not incorporate the polarizing feature should never be used.

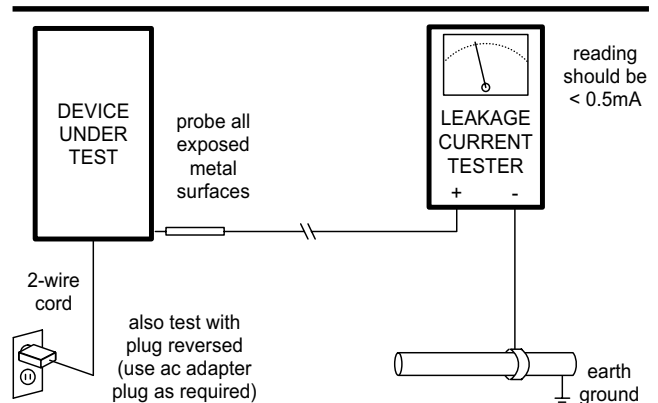
PICTURE TUBE IMPLOSION WARNING - If the instrument being

serviced incorporates a picture tube it will employ integral implosion protection. For continued implosion protection, replace the picture tube only with one of the same type number.

Do not remove, install, or otherwise handle the picture tube in any manner without first putting on shatterproof goggles equipped with side shields. People not so equipped must be kept safely away while picture tubes are handled. Keep the picture tube away from your body. Do not handle the picture tube by its neck. Some "in-line" picture tubes are equipped with a permanently attached deflection yoke; because of potential hazard, do not try to remove such "permanently attached" yokes from the picture tube.

X-RADIATION AND HIGH VOLTAGE LIMITS - Because the picture tube is the primary source of X-radiation in solid-state TV receivers, it is specially constructed to prohibit X-radiation emissions. For continued X-radiation protection, a replacement picture tube must be the same type as the original. The picture shields, mounting hardware and lenses (projection TV) may also perform an X-radiation protection function, and they must be correctly in place. Anode connectors contain an X-radiation shield - use only the manufacturer's specified anode connectors. High voltage must be measured each time servicing that involves power supply, horizontal deflection or high voltage circuits is performed. Correct operation of the X-radiation circuits must also be confirmed each time these circuits are serviced (X-radiation circuits may also be called "horizontal disable" or "hold-down" circuits). Read and apply high voltage limits and, if the chassis is so equipped, the X-radiation protection circuit specifications. These limits and specifications are given on instrument labels and are included in this service data. High voltage is maintained within specified limits by close-tolerance safety-related components (and adjustments) in the high voltage circuit. If high voltage exceeds specified limits, check each safety related component specified on the schematic and take corrective action.

ANTENNA LEAKAGE RESISTANCE CHECK - With the instrument AC plug removed from the AC source, connect an electrical jumper across the two AC plug prongs. Place the instrument AC switch (if applicable) in the "on" position. Connect one lead of an ohmmeter to the AC plug prongs and touch the other ohmmeter lead, in turn, to each (exposed) antenna input terminal screw and/or coaxial connector. If the measured resistance is less than 1.0 Megohm, or greater than 5.2 Megohm, an abnormality exists which must be corrected before the instrument is returned to the customer. Repeat this test with the AC switch in the "off" position.



LEAKAGE CURRENT HOT CHECK FOR 2-WIRE OR 3-WIRE GROUNDED CORD SETS - With the instrument completely reassembled, plug the AC line cord into the mains AC outlet at normal line voltage via a non-polarized adapter. **DO NOT GROUND THE 3RD PRONG OF THE ADAPTER AND DO NOT USE AN ISOLATION TRANSFORMER.** Use a leakage current tester or metering system that complies with American National Standards Institute (ANSI) *C101.1 Leakage Current for Appliances* and with Underwriters Laboratories (UL) *1492 (Section 67)*. With the instrument AC switch first in the "on" position and then in the "off" position, measure from a known earth ground (metal water pipe, conduit, etc.) to all exposed metal parts of the instrument (antennas, handle bracket, metal cabinet, screwheads, metallic overlays, control shafts, etc.). Any current measured must not exceed 0.5 milliamperes. Reverse the adapter plug in the outlet and repeat the test. **ANY MEASUREMENTS NOT WITHIN THE LIMITS SPECIFIED HEREIN INDICATE A POTENTIAL SHOCK HAZARD THAT MUST BE ELIMINATED BEFORE RETURNING THE INSTRUMENT TO THE CUSTOMER OR BEFORE CONNECTING THE ANTENNA OR ACCESSORIES.** If a leakage current tester is not available, connect a 1.5 Kohm, 10 Watt resistor, in parallel with a 0.15 μ F, 150V capacitor, between earth ground and each exposed metal part of the instrument (as shown above). Use an AC voltmeter with at least 5000 ohm/volt sensitivity to measure the potential across the resistor. The potential measured for any exposed metal surface must not exceed 0.75 volts.